

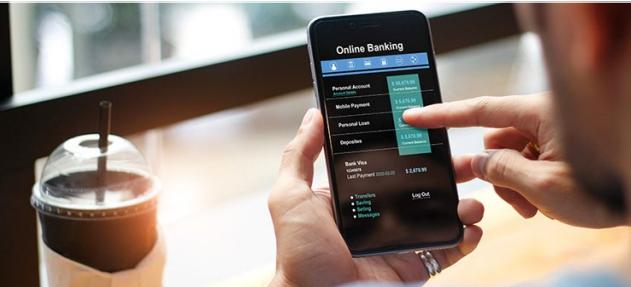
Cloud-native approach for modernising your mainframe workload using OAS3 API

Application end-to-end visibility with
IBM Z Observability by Instana

George Ge
ypge@au1.ibm.com

Digital transformation imposes significant demands on existing applications and data

Digital use cases drive data and functionality needs that are hosted on IBM Z®



Account queries on Mobile
using open APIs



Modernize loyalty program
to hybrid cloud



Raise credit
card dispute

“More than 90% of financial institutions use or plan to use APIs to generate additional revenue among existing customers”

Modernization for optimization (APIs are the first step)

- Modern developers demand modern APIs
- IBM Z is the core of your business
- Developer consumable interfaces to your core business logic are imperative to drive innovation
- Innovation is required to compete in rapidly changing markets
- RESTful APIs are the open standard being used to transform businesses in these markets



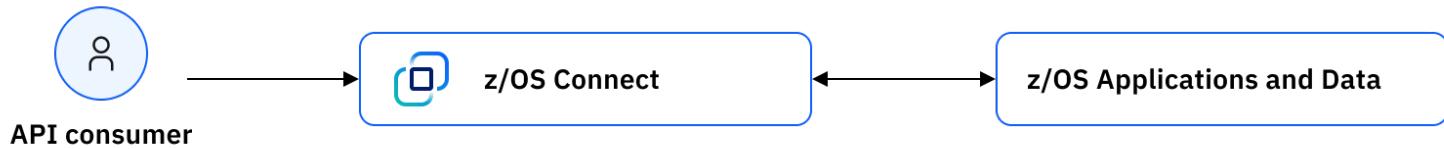


z/OS Connect

Unlock the value of your IBM Z subsystems with truly RESTful APIs

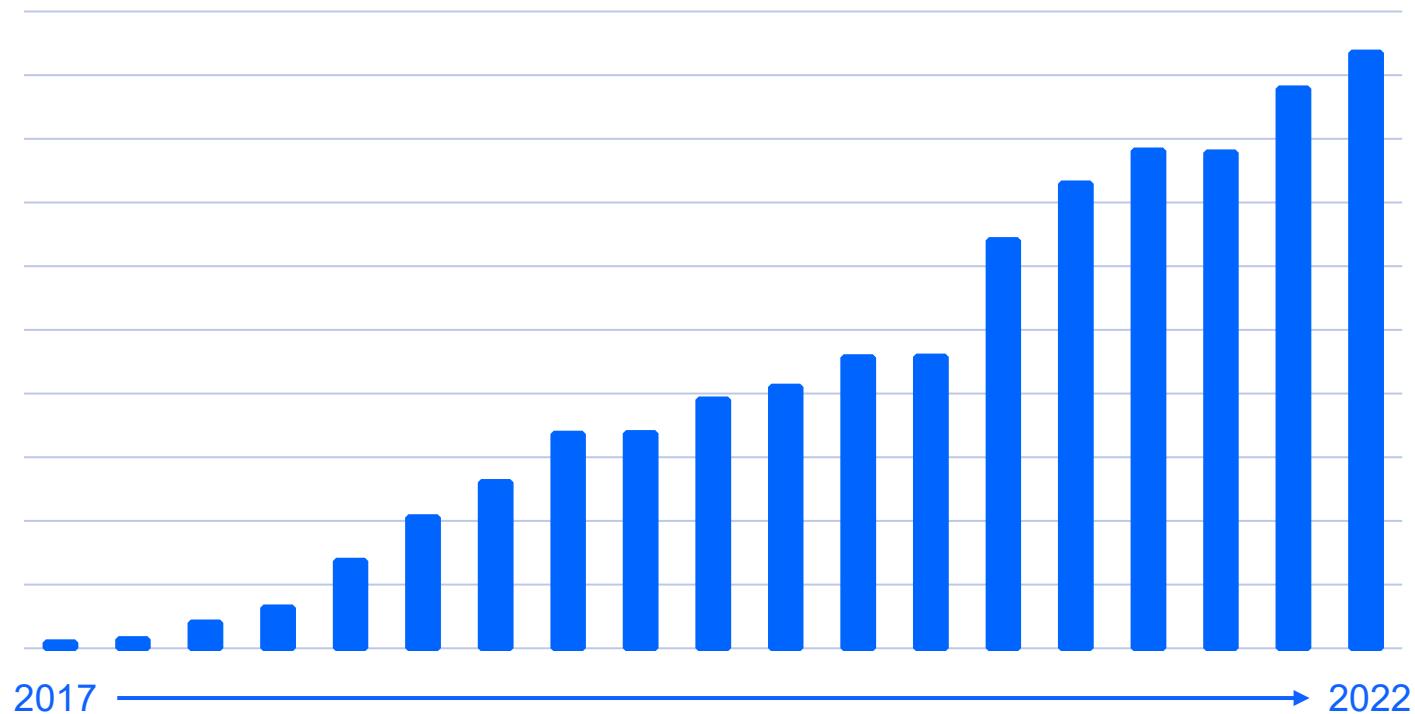
Create consumable APIs in minutes to make Z applications and data central to your hybrid cloud strategy.

Call APIs from Z applications to enhance them with the power of cloud native functions.



z/OS Connect adoption is exploding

z/OS Connect Enterprise Edition
Growth





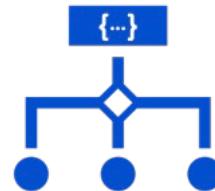
API First

As companies mature their API strategy, they begin to introduce API governance boards to drive consistency in their API design

As more public APIs are created, government and industry standards bodies begin to regulate and drive for standardization

This drives the need for "API first" functional mapping capabilities within the integration platform

API creation from core services



API design dictated by underlying service interfaces

API design governance boards



API designed to accommodate needs of consumers and providers

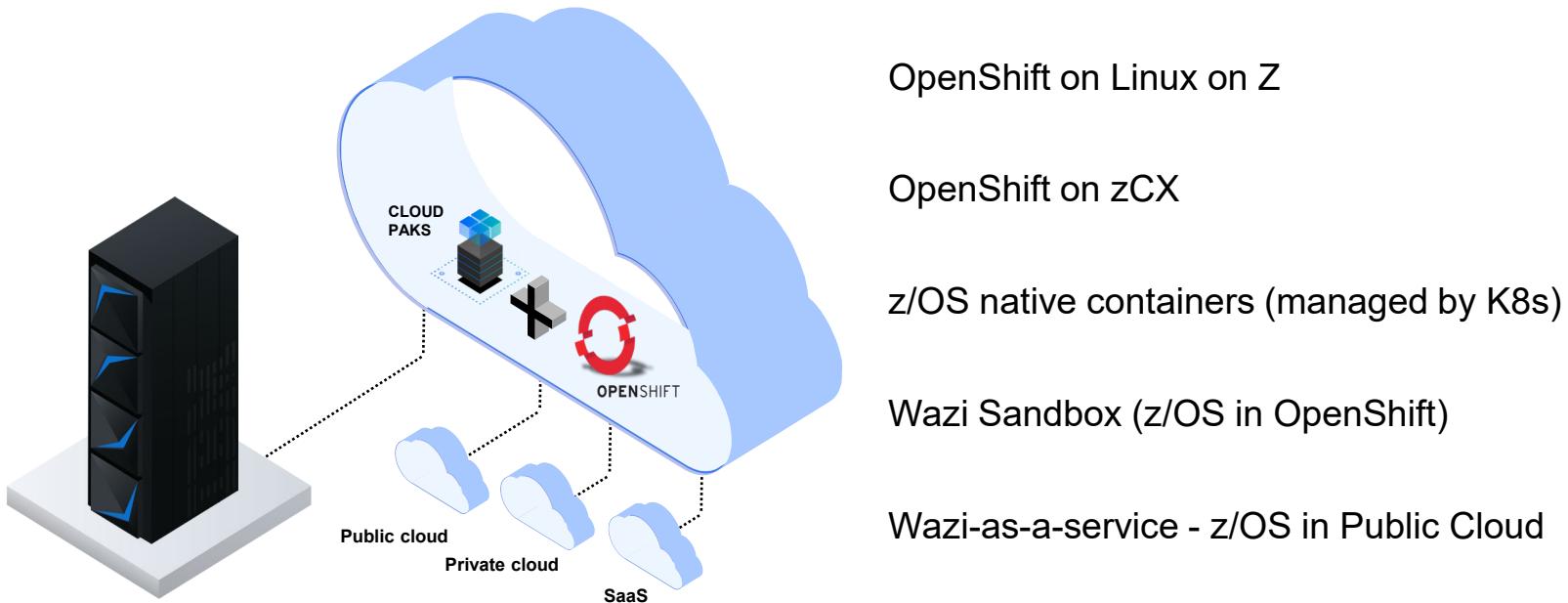
Need for "API first" mapping increasing

Industry / regulatory API standards



API design is fixed and nonnegotiable

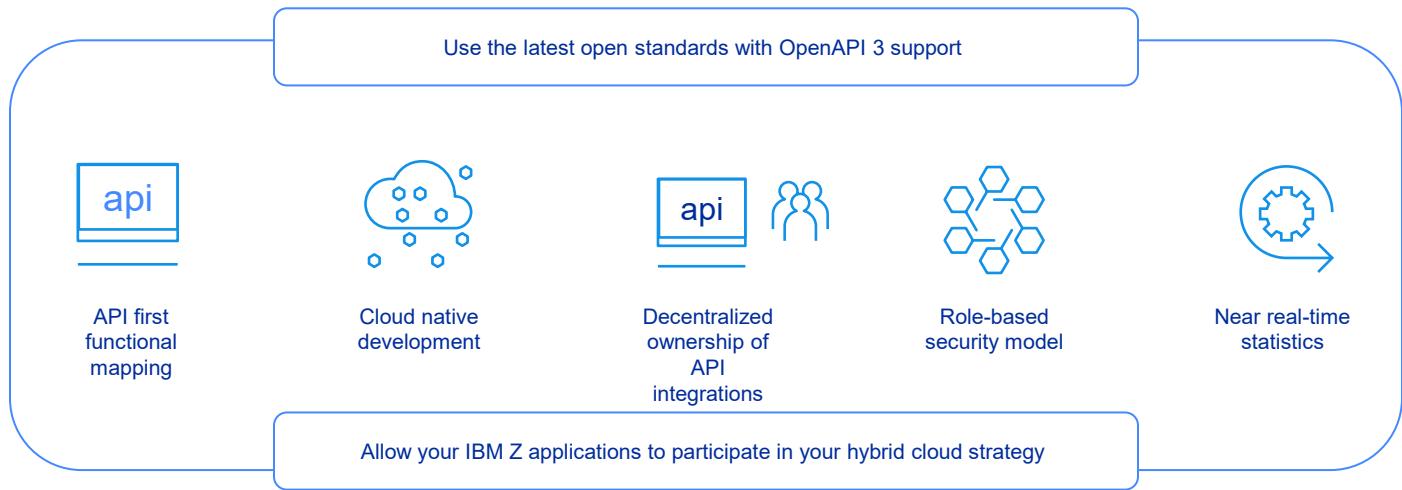
Kubernetes and containers are becoming the de facto standard for systems management for ALL systems (including IBM Z)



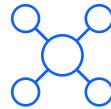
Enterprise-wide API integration for z/OS applications and data on IBM Z®

Today, with z/OS Connect, application developers can create RESTful APIs to mainframe programs and data in minutes

- Call APIs from Z apps to enhance them with the power of cloud native functions.
- Increase agility and rapidly respond to business requirements which demand access to core assets on IBM Z.
- Create consumable APIs to make Z apps and data central to your hybrid cloud strategy.



Enterprise-wide API integration for z/OS applications and data on IBM Z®



Create and deploy

OpenAPI 3 defined APIs in minutes.

- Confidence that APIs being built will meet company, and industry standards.
- API first puts the specification at the heart of the project.



Increase agility

Accelerate innovation on IBM Z.

- Isolated API flows are deployed separately so do not affect one another.
- API flows can be scaled independently, taking advantage of efficient elastic scaling of cloud infrastructure.



Simplify operations

Decentralized ownership of API integrations

- Common cloud development experience across an enterprise
- Automation using OCI containers and industry standards platforms such as Kubernetes and RedHat® Openshift®



Standardize

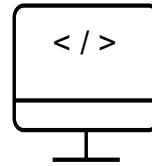
Harness the renowned security of z/OS

- Accelerate innovation on IBM Z by using a consistent way to monitor, control and audit APIs on the platform
- Secure APIs with modern OpenAPI based security schemes



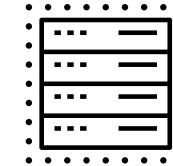
z/OS Connect Components

Two standalone components make z/OS Connect easy to get started: an intuitive toolset for developers, and a scalable runtime server



z/OS Connect Designer

- Development tool for defining and exposing API assets
- Query and transformational capabilities using an intuitive, familiar toolset
- Powerful web-based user interface
- Map Z assets (e.g. COBOL copybooks) to OpenAPI definitions
- Iterative development and testing using built-in isolated development server



z/OS Connect Server

- Runtime component that exposes z/OS Connect API projects, with containerised option
- Flexible deployment options:
 - **SMP/E install**, a z/OS native server
 - **S390x**, to integrate close to your core applications
 - **amd64**, to integrate on your cloud provider
- Role-based security caters for different user profiles
- Independently deploy and scale API integrations
- Understand what's going on, with near real time statistics to tools such as Prometheus.

Import OpenAPI document

Drag and drop or [select a file](#)

OpenAPI Specification 3.0 supported (JSON or YAML file formats)

Specify a URL

[Import file](#)

[Create API](#)

CatalogManagerApi	1.1
Information	
Security	
Paths	3
/items	1
GET	
/items/{id}	1
GET	
/orders	1
POST	
z/OS Assets	1
catalogProgram	
Components	9
Tags	0

Paths

Saved Test Import ⋮

Path Operations Status

/items	GET	Ready
/items/{id}	GET	Ready
/orders	POST	Ready

3 paths

CatalogManagerApi

1.1

Paths / /items / GET

Saved

Test

:

Information

Security

Paths

3

/items

1

GET

/items/{id}

1

GET

/orders

1

POST

z/OS Assets

1

+

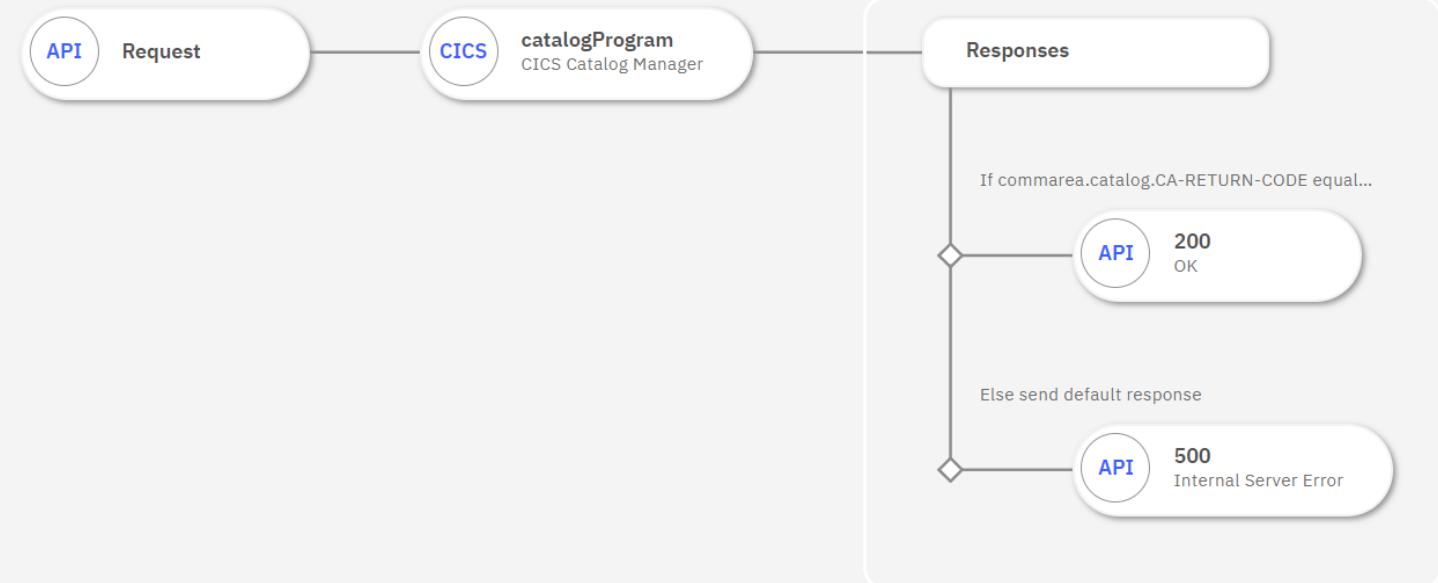
catalogProgram

Components

9

Tags

0



Saved

[Test](#)

CatalogManagerApi

1.1



Paths / /items / GET

Information

Security

Paths

3

/items

1

GET

/items/{id}

1

GET

/orders

1

POST

z/OS Assets

1



catalogProgram

Components

9

Tags

0

View operation properties

API Request

CICS

catalogProgram
CICS Catalog Manager

Responses

If commarea.catalog.CA-RETURN-CODE equal...

API

200
OK

API request

API request structure

Parameters

Name	In	Type	Format	Required
startItemID	query	string	-	true

Body

No body defined

Saved

Test

:

CatalogManagerApi

1.1

Paths / /items / GET

Information

Security

Paths

3

/items

1

GET

/items/{id}

1

GET

/orders

1

POST

z/OS Assets

1

+

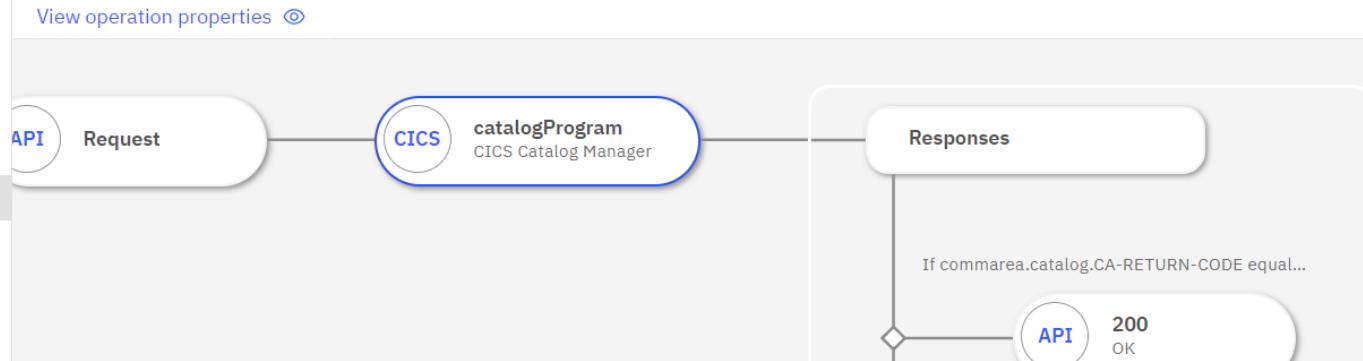
catalogProgram

Components

9

Tags

0

**catalogProgram**

z/OS Asset options ⋮

catalog

└ CA-REQUEST-ID

└ CA-RETURN-CODE

└ CA-RESPONSE-MESSAGE

└ CA-REQUEST-SPECIFIC

└ CA-INQUIRE-REQUEST

└ CA-LIST-START-REF

└ CA-LAST-ITEM-REF

abc	01INQC
123	
abc	
abc	

123	
abc	
abc	
abc	

abc	
123	
abc	
abc	

123	(API) startItemID
123	

123	
abc	

123	
abc	

Saved

Test

...

CatalogManagerApi

1.1

Paths / /items / GET

Information

Security

Paths

3

/items

1

GET

/items/{id}

1

GET

/orders

1

POST

z/OS Assets

1

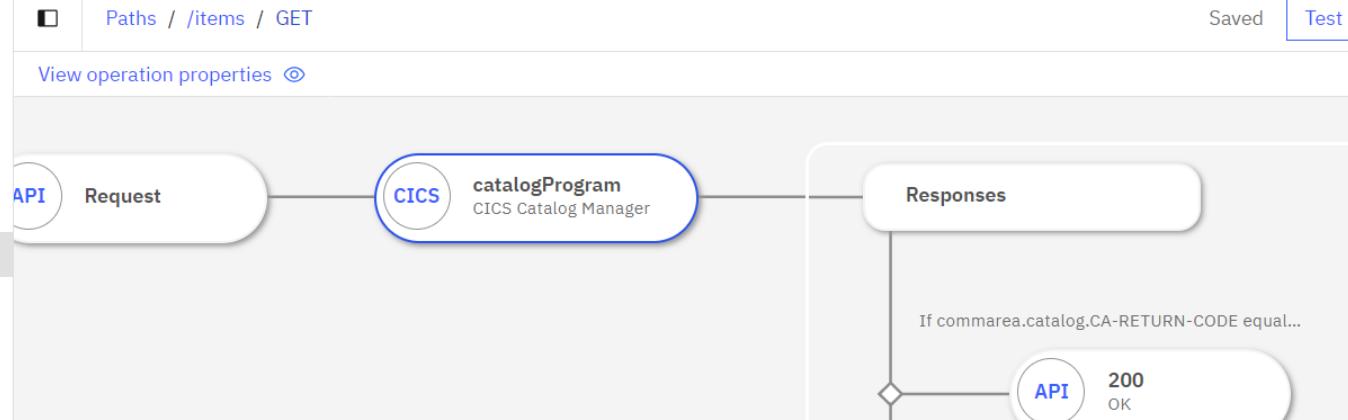
catalogProgram

Components

+

Tags

0

**catalogProgram**

catalog

CA-REQUEST-ID

abc 01INQC

ⓘ

CA-RETURN-CODE

123

ⓘ

CA-RESPONSE-MESSAGE

abc



ⓘ

CA-REQUEST

CA-INQUIRE-I

CA-LIST

CA-LAST

CA-ITEM

Available mappings

queryParameters / Object

Object { }

startItemID abc

Saved

Test



CatalogManagerApi

1.1



Paths / /items / GET

Information

Security

^ Paths

3

^ /items

1

GET

^ /items/{id}

1

GET

^ /orders

1

POST

^ z/OS Assets

1

catalogProgram



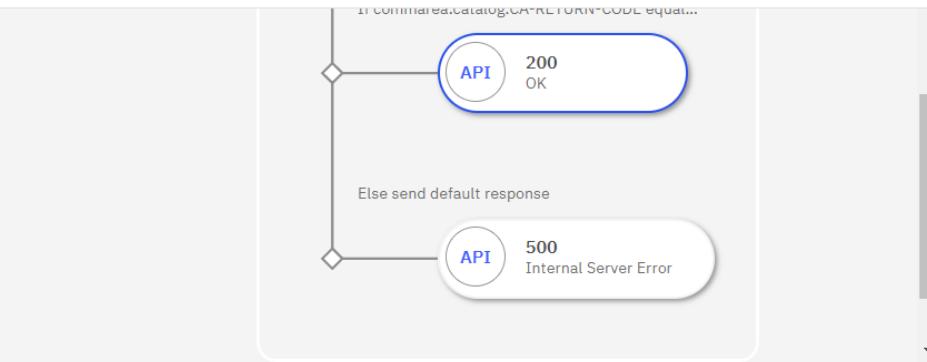
^ Components

9

Tags

0

200 - OK



totalItems

123

CA-ITEM-COUNT



items

[]

CA-CAT-ITEM



summary

stock

abc Department [CA-DEPARTMENT](#) has [IN-STOCK](#) '[CA-DESCRIPTION](#)' in stock.



orders

abc [ON-ORDER](#) '[CA-DESCRIPTION](#)' on order at unit price of
 $\$ \{ \text{$length}(\text{CA-COST}) = 0 ? 0 : \text{$number}(\text{CA-COST}) \}$. Total
order value: $\$ \{ \text{$length}(\text{CA-COST}) = 0 ? 0 :$
 $\text{$number}(\text{CA-COST}) * \text{$number}(\text{ON-ORDER}) \}$



information



200 - OK

orders

abc ON-ORDER on order at unit price of

A\$ {{ \$length(CA-COST) = 0 ? 0 : \$number(CA-COST) }}.

Total order value: \$ {{ \$length(CA-COST) = 0 ? 0 :

\$number(CA-COST) * \$number(ON-ORDER) }}

information

itemReference

123 CA-ITEM-REF



description

cost

department

stock

onOrder

Functions

String functions

Date/Time functions

Numeric functions

Boolean functions

Casting functions

Aggregation functions

Array functions

Liberty REST APIs 1.0.0 OAS3

Discover REST APIs available within Liberty

Servers

<https://routencqwp39v-wazi-codeready-kubeadmin.apps-crc.testing:443> ▾

Authorize 

Catalog



GET /items Get items in the catalog



GET /items/{id} Get an item from the catalog



POST /orders Place an order for an item



Schemas



inline_response_404 >

CatalogItemResponse_summary >

CatalogResponse >

Name	Description
startItemID * required	<input type="text" value="0"/> string (query)

Servers

These path-level options override the global server options.

Responses

Curl

```
curl -X 'GET' \
  'https://routencqwp39v-wazi-codeready-kubeadmin.apps-crc.testing/items?startItemID=0' \
  -H 'accept: application/json'
```



Request URL

```
https://routencqwp39v-wazi-codeready-kubeadmin.apps-crc.testing/items?startItemID=0
```

Server response

Code	Details
------	---------

200	Response body
-----	---------------

```
{ "totalItems": 15,
  "items": [
    {
      "summary": {
        "stock": "Department 1E+1 has 92 'Ball Pens Black 24pk' in stock.",
        "orders": "0 'Ball Pens Black 24pk' on order at unit price of $2.9. Total order value: $0"
      },
      "information": {
        "itemReference": 10,
        "description": "Ball Pens Black 24pk",
        "cost": "$2.9"
      }
    }
  ]
}
```



Quick and easy

A web-based user interface, provides a no code approach to create APIs in minutes

Removes any dependency on Z platform development skills

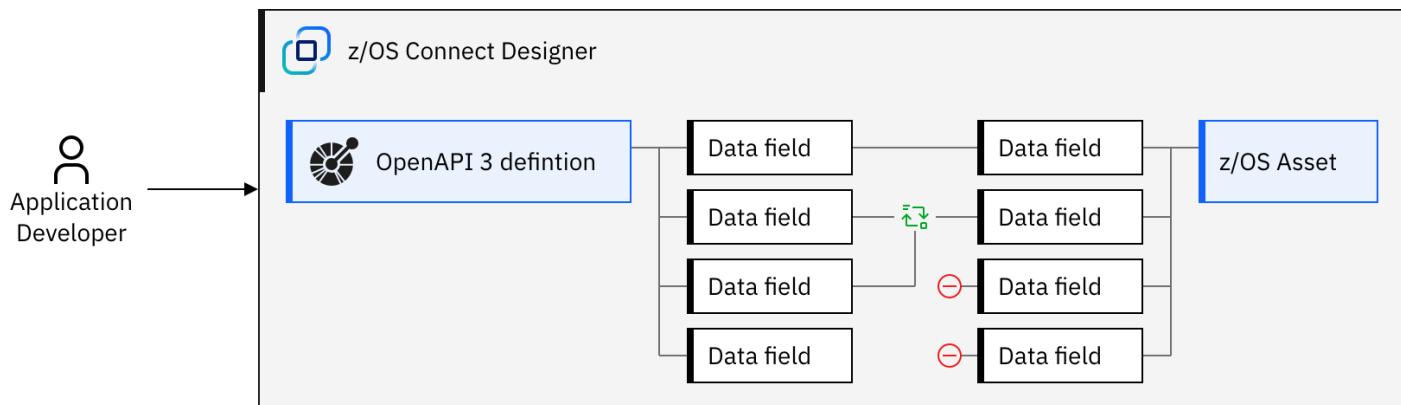
Rapid development of APIs using modern DevOps processes

Native z/OS Data

```
{  
  "Body": {  
    "ResultSet Output": [  
      {  
        "EMPNO": "000010",  
        "FIRSTNAME": "JACKK",  
        "MIDINIT": "I",  
        "LASTNAME": "HAAS",  
        "WORKDEPT": "A00",  
        "PHONENO": "3978",  
        "HIREDATE": "2000-01-01",  
        "JOB": "PRES",  
        "EDLEVEL": 18,  
        "SEX": "F",  
        "BIRTHDATE": "1933-08-14",  
        "SALARY": 52750,  
        "BONUS": 1000,  
        "COMM": 4220  
      }  
    ],  
    "StatusDescription": "",  
    "StatusCode": 0  
  }  
}
```

OpenAPI 3 response

```
[  
  {  
    "personal": {  
      "firstName": "JACKK",  
      "middleInitial": "I",  
      "lastName": "HAAS",  
      "sex": "F",  
      "dateOfBirth": "1933-08-14"  
    },  
    "summary": {  
      "bio": "JACKK HAAS"  
    },  
    "work": {  
      "employeeNumber": "000010",  
      "department": "A00",  
      "phoneNumber": "3978",  
      "hireDate": "2000-01-01",  
      "job": "PRES",  
      "educationLevel": 18,  
      "pay": {  
        "salary": 52750,  
        "bonus": 1000,  
        "commission": 4220  
      }  
    }  
  }  
].
```

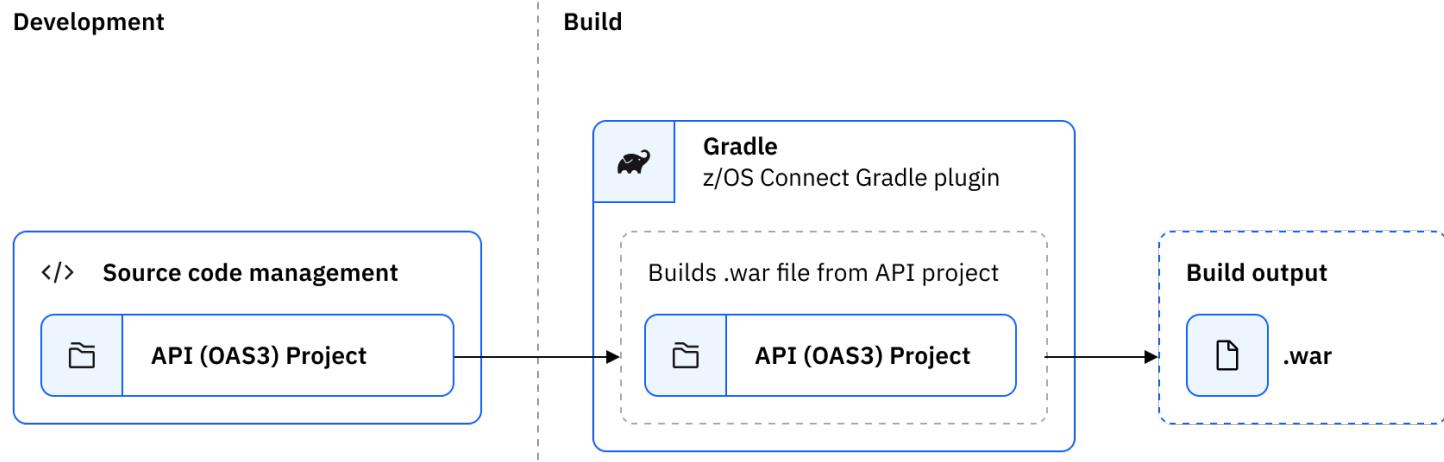




Build

z/OS Connect now leverages the open-source build tool Gradle to create API deployable artifacts which is a standard .war archive.

The entire process can be driven by a Git-based pipeline, and the API archive can be stored in an artifact repository like Artifactory.

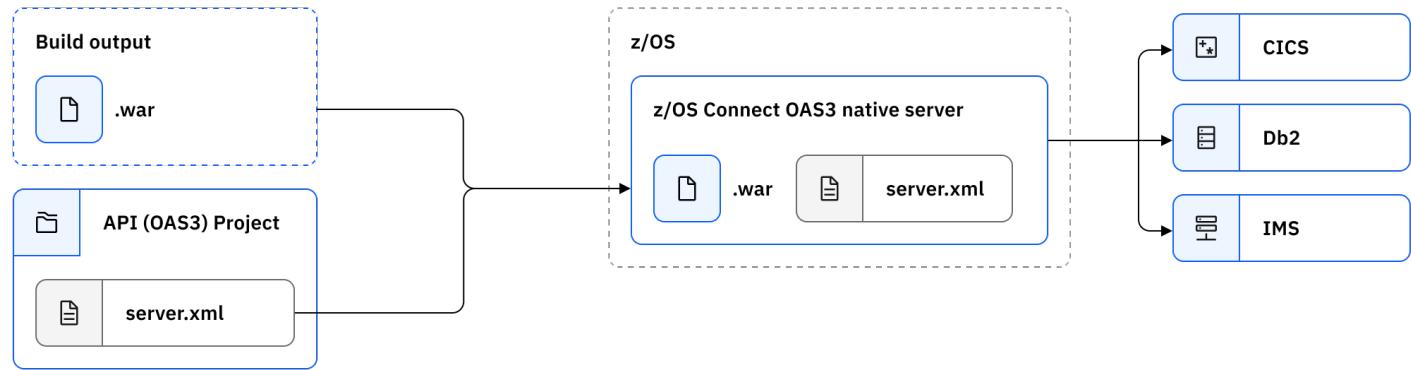




Deploy to z/OS native server

You can deploy the API artifacts to a native z/OS Connect server that runs on z/OS as standard address space.

You will get the performance benefits of running it right next to the target backend system and leverage z/OS QoS e.g. SAF-based security and z/OS workload management

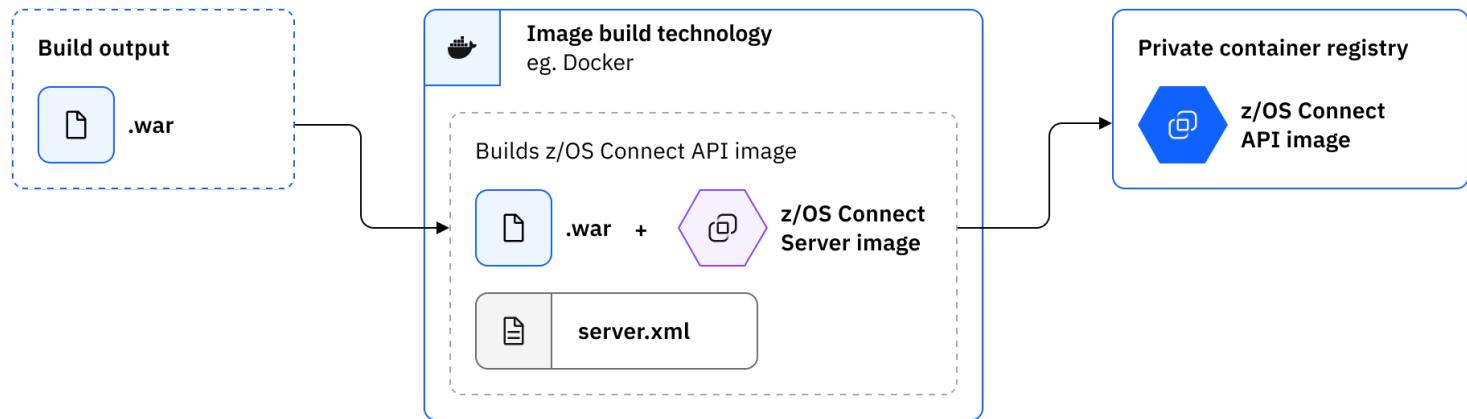




Cloud-native API container image



Alternatively, you can use any standard container image technology to create a z/OS Connect API image by combining the API artifacts and the supplied server image etc, then publish to a container registry for deploying to a Kubernetes cluster.

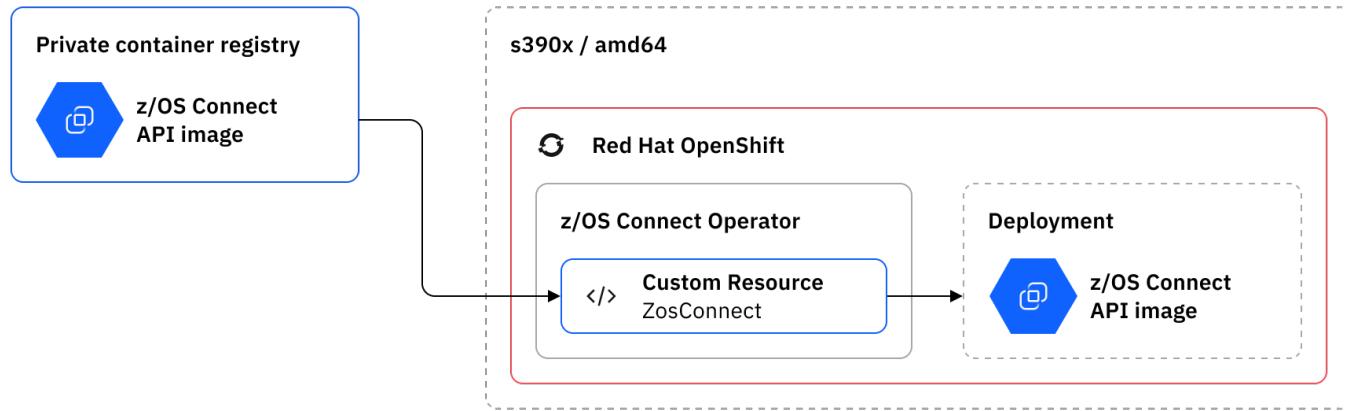




Deploying to OpenShift

Deploying to OpenShift

To deploy your z/OS Connect API image to an Openshift environment, you must firstly install the z/OS Connect operator, then creating a ZosConnect Custom Resource (CR).



Purchase options

This matrix represents the current plans and capabilities for z/OS Connect as of **September 2022**.

This view is subject to change and therefore should used as a guide not an IBM commitment to deliver.

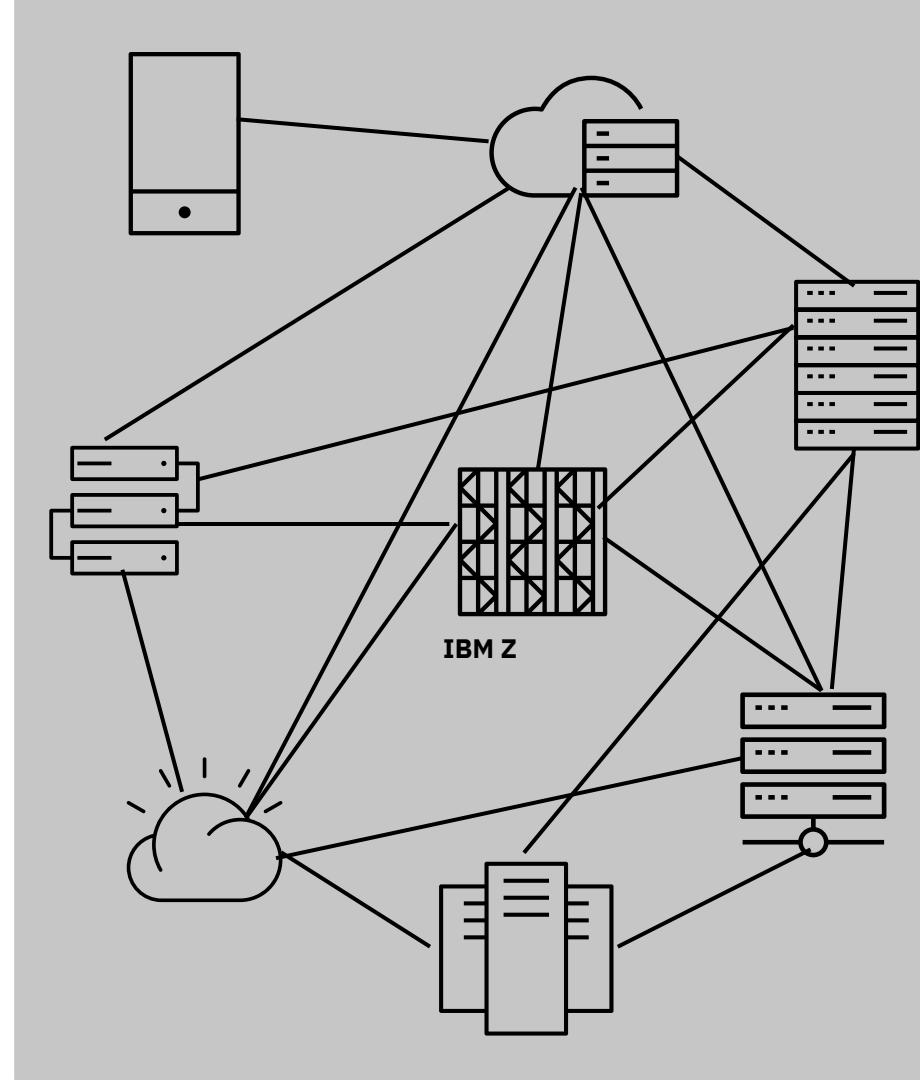
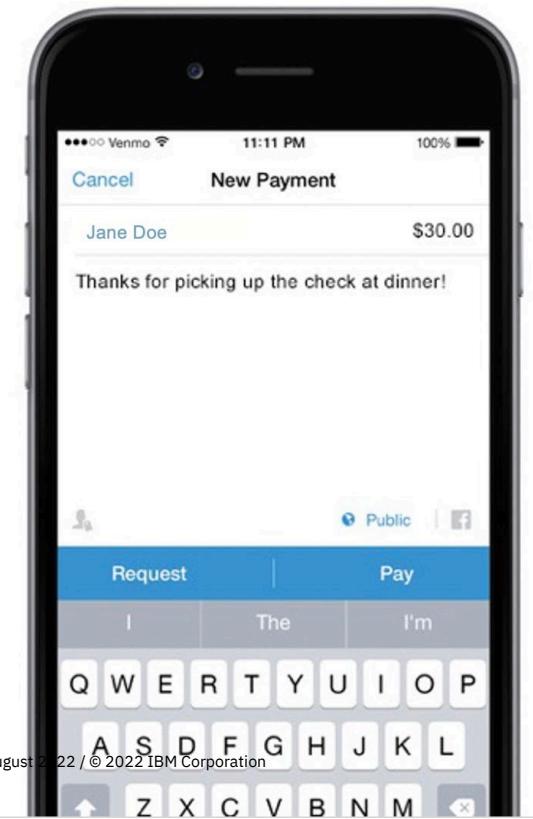
Plans and priorities can change.

The details in this matrix will be updated on a monthly basis as we deliver more capability through continuous deliver drops. **Please ensure you are viewing the most up to date version.**

		z/OS Connect simultaneous instances		z/OS Connect Unlimited		IBM Z and Cloud Modernisation Stack
		Eclipse API Toolkit (and zcombt)	Designer container (and Gradle)	Eclipse API Toolkit (and zcombt)	Designer container (and Gradle)	Designer container (and Gradle)
OpenAPI	OpenAPI 2	✓		✓	✗	✗
	OpenAPI 3	✗		✗	✓	✓
API provider	API first mapping	✗		✗	✓	✓
	Db2	✓		✓	✓	✓
	CICS TS COBOL	✓		✓	✓	✓
	CICS TS PL/I	✓		✓	✓	✓
	IMS TM COBOL	✓		✓	✓	✓
	IMS TM PL/I	✓		✓	✓	✓
	IMS DB	✓		✓	✓	✓
	MQ	✓		✓	✓	✓
	REST Client	✓		✓	✗	✗
	WOLA application	✓		✓	✗	✗
	3rd party extenders	✓		✓	✓	✓
	3rd party monitors	✓		✓	✓	✓
API requester	CICS COBOL	✓		✓	✓	✓
	CICS PL/I	✓		✓	✓	✓
	IMS TM COBOL	✓		✓	✓	✓
	IMS TM PL/I	✓		✓	✓	✓
	z/OS application	✓		✓	✓	✓
	API first mapping	✗		✗	✓	✗
Server Runtime	z/OS native server	✓		✓	✓	✗
	Linux Container AMD64	✗		✗	✓	✓
	Linux Container s390x	✗		✗	✓	✓
	z/OS Container s390x	✗		✗	✓	✓

Hybrid Cloud Observability from Mobile through Mainframe with Instana

We are in a hybrid cloud world



Modern application enterprise environments are **complex**

Organizations are turning to **AI powered automation** to improve speed, utilization and service delivery

Lack of Visibility

Multi-cloud, disparate platforms & tools, and complex technology stacks.

No single source of truth results in manual actions

Rising Costs

Spend is not optimized – resulting in massive overspend

Resourcing decisions are made with “oversized guesstimates” to avoid performance issues

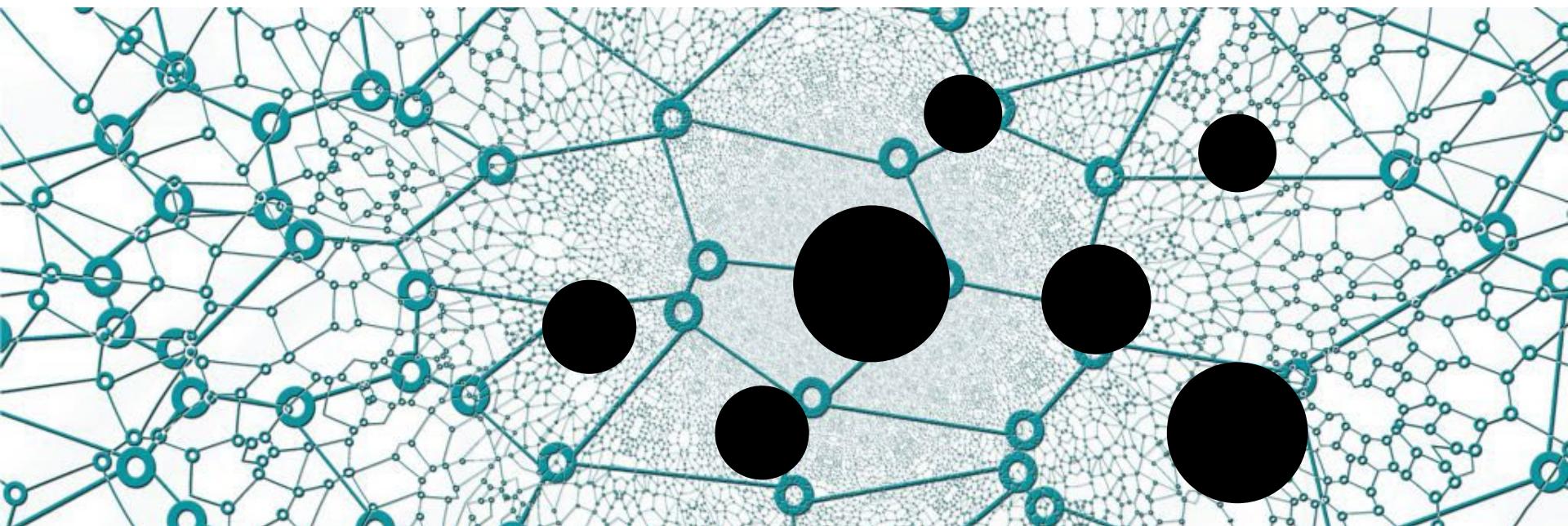
Limited Staff Chasing Issues

Noise from disparate systems makes it difficult to enforce IT policies

Manual actions drains time from core business focus and few have the specialized knowledge needed



Traditional monitoring tools don't give DevOps teams
full visibility into hybrid and rapidly changing environments



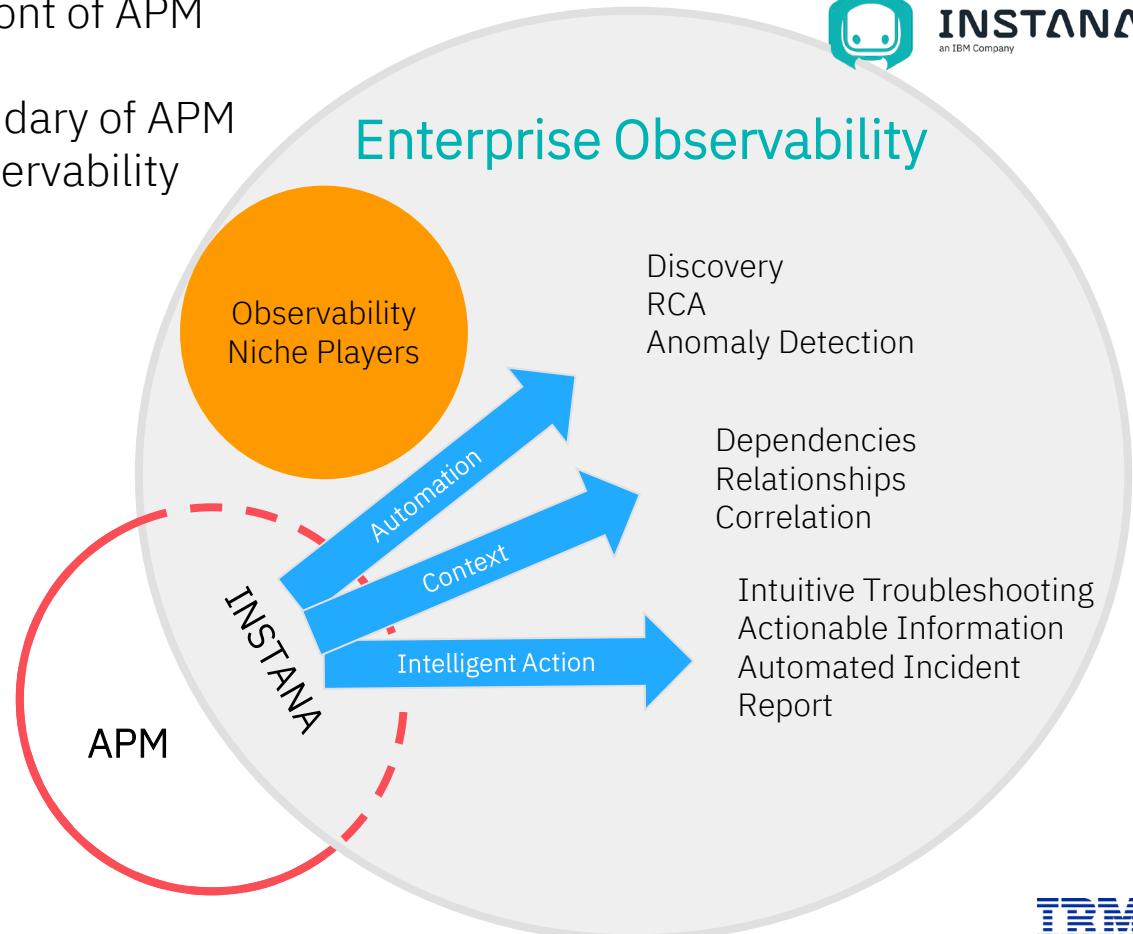
You can't fix what you can't see

Instana has long been at the forefront of APM

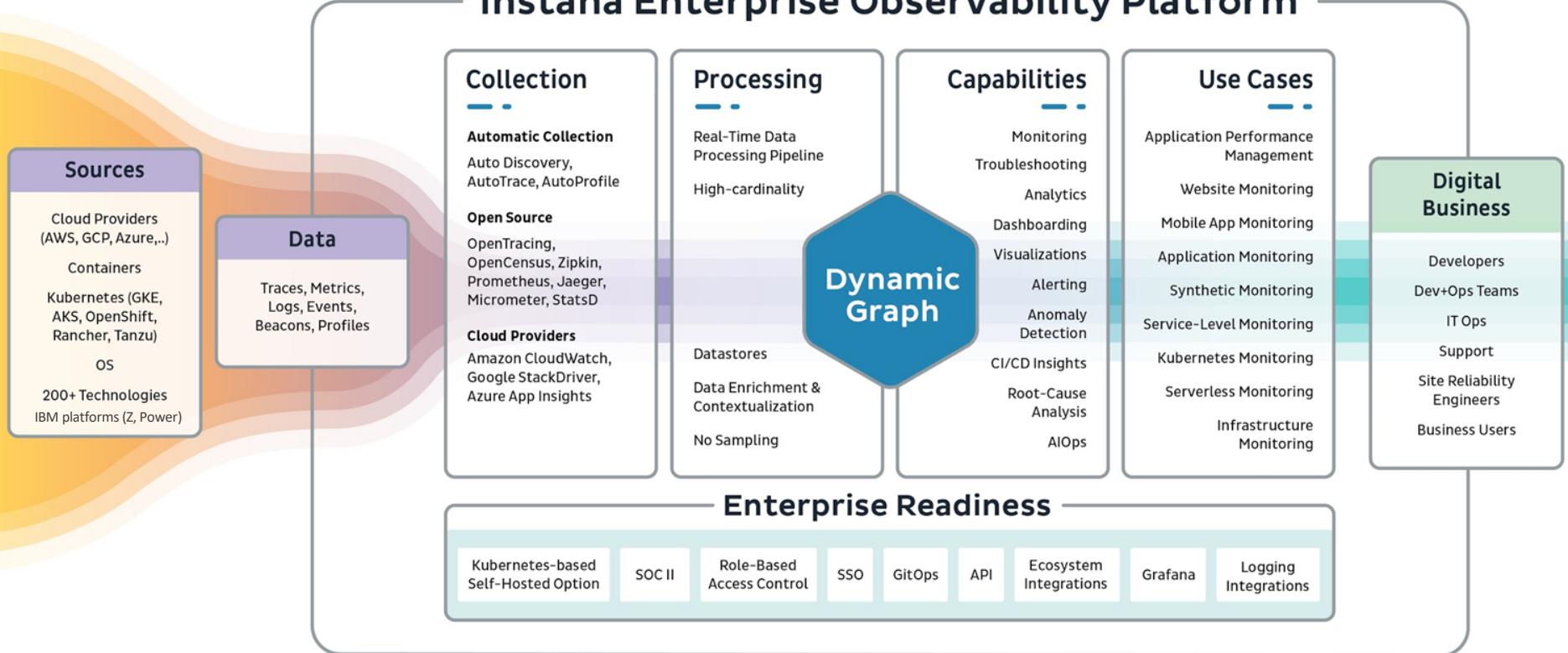


Instana has broken out of the boundary of APM
to lead the way into Enterprise Observability

Automation Context Intelligent Action



Instana Enterprise Observability Platform



100% collection, 1-second granularity

Instana coverage today

Supporting Multiple Domains

BizOps

DevOps

SecOps

ITOps

Comprehensive Capabilities



AUTO-DISCOVERY
& INSTRUMENTATION



VERTICAL & HORIZONTAL
CONTEXT



APPLICATION
PERSPECTIVES



PIPELINE
FEEDBACK



ROOT CAUSE
ANALYSIS



UNBOUNDED
ANALYTICS

250+ Observed Technologies



RUNTIMES



OSS COLLECTORS



MESSAGING



WEB PROXIES



IBM TECHNOLOGIES



DATASTORES

Mobile Apps

IBM Cloud Azure

Websites

AWS Google Cloud

DIGITAL

Hybrid Multi-Cloud Platform Observability

Kubernetes

Cloud Foundry and BOSH

Docker

VMware vSphere

CLOUD & VIRTUALIZATION PLATFORMS

Windows Linux

Mac OS Unix

MACHINES



IBM Systems Platforms

Isolation, investigating and resolving hybrid application issues impact multiple teams



Application owner

Responsibility for the availability and performance of a business application. Limited understanding of the technology involved in the application (especially the mainframe)



Mainframe Subject Matter Experts

Deep skills and knowledge on z/OS-based workloads and environment. Will typically use tooling like OMEGAMON to investigate and resolve problems. Have limited visibility outside of mainframe



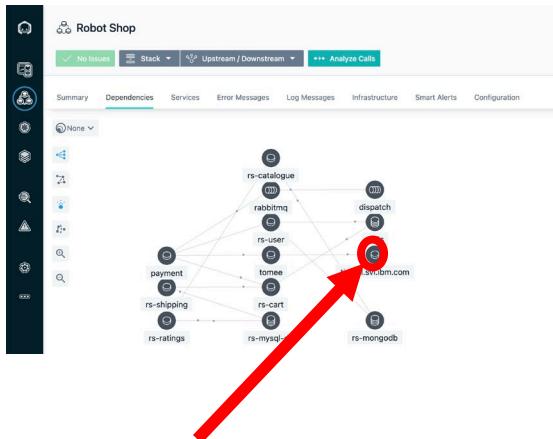
Ensures applications are running smoothly on cloud or distributed hardware.

Site Reliability Engineers / (non-Z) IT operations

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



Application
Owner



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.**

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



MQ SME

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



IMS SME

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



CICS SME

Improved experience with Instana on z/OS

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.



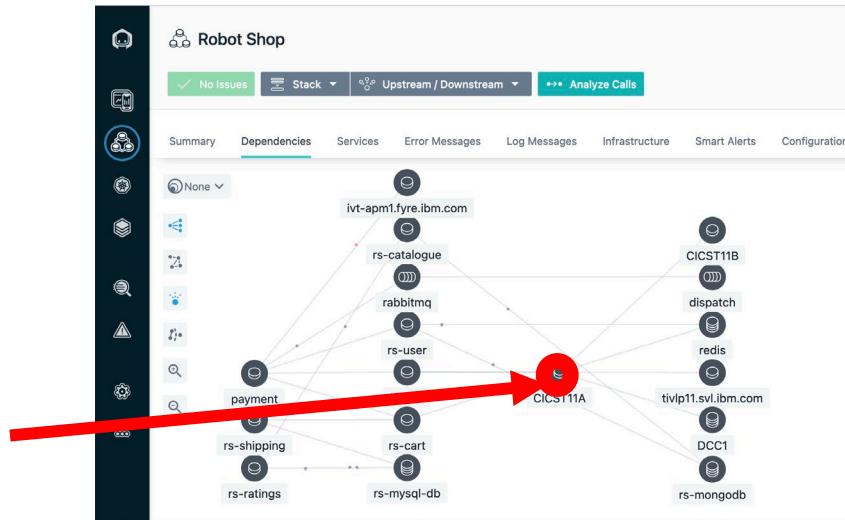
Application
Owner

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.



CICS SME





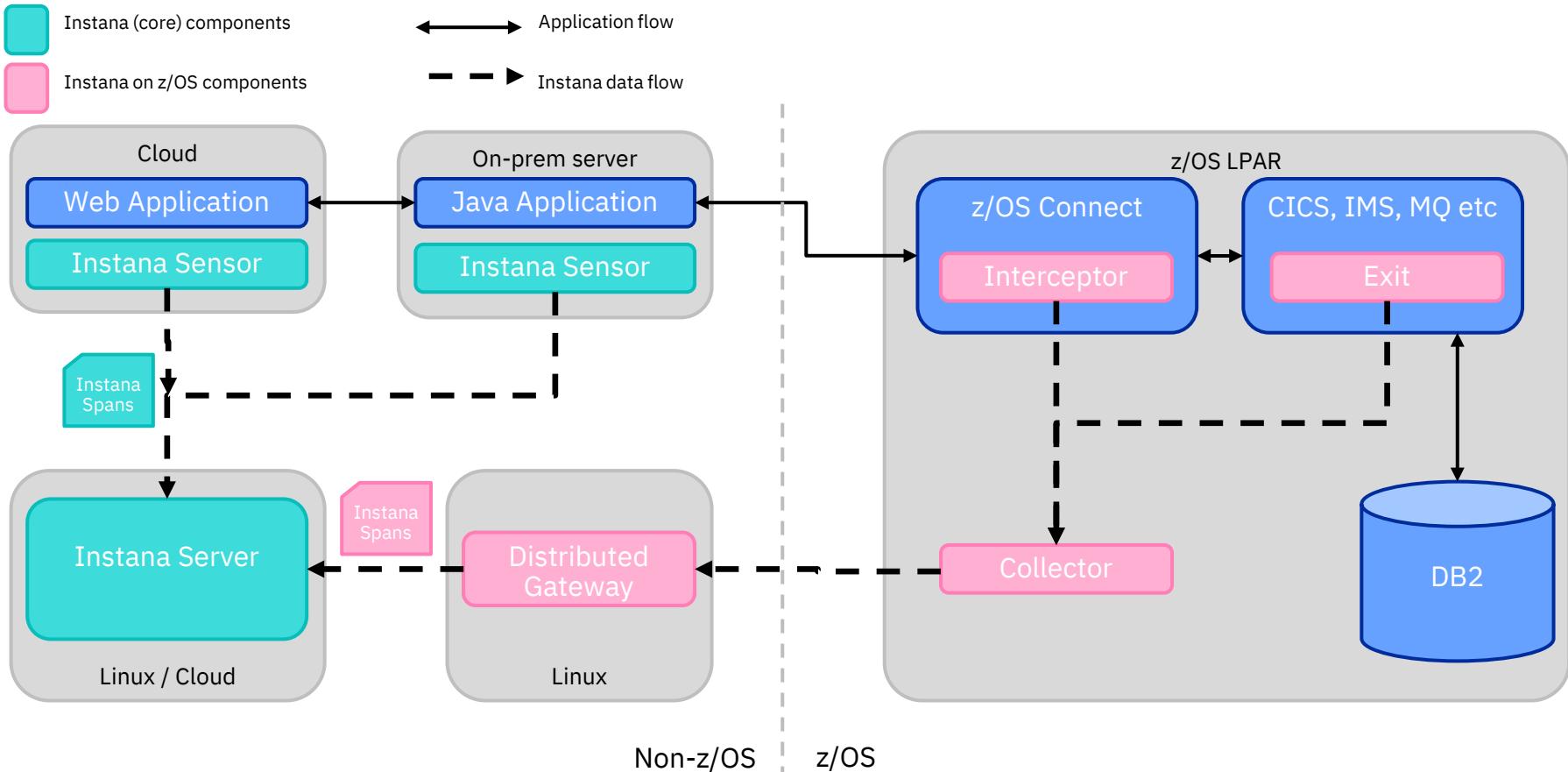
Applications



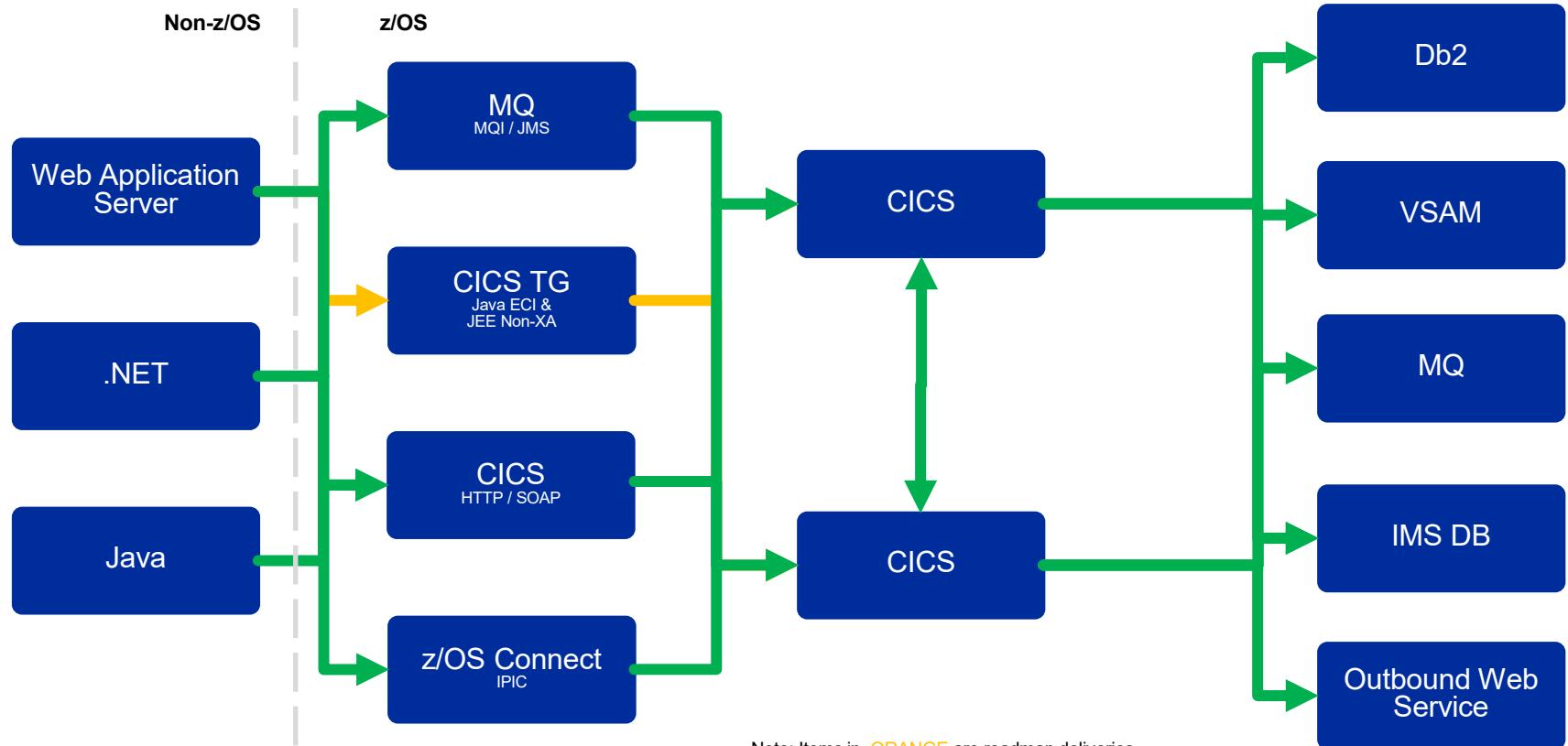
Name	Scope	Services	Calls ↓	Latency	Erroneous Call Rate	Health
MockData		9	9,582	992ms	0.00%	
Robot Shop		16	5,667	8ms	0.58%	
All Services		13	4,239	2,057ms	1.36%	
zHybrid		13	3,073	2,166ms	2.21%	
DEMOAPPS		0	0	0ms	0.00%	
CICS MQ Testing		0	0	0ms	0.00%	
Db2_jdbc_PoC		0	0	0ms	0.00%	
IMS_MQ_Bridge		0	0	0ms	0.00%	
JMS Application		0	0	0ms	0.00%	
MQ Application		0	0	0ms	0.00%	

+ ADD

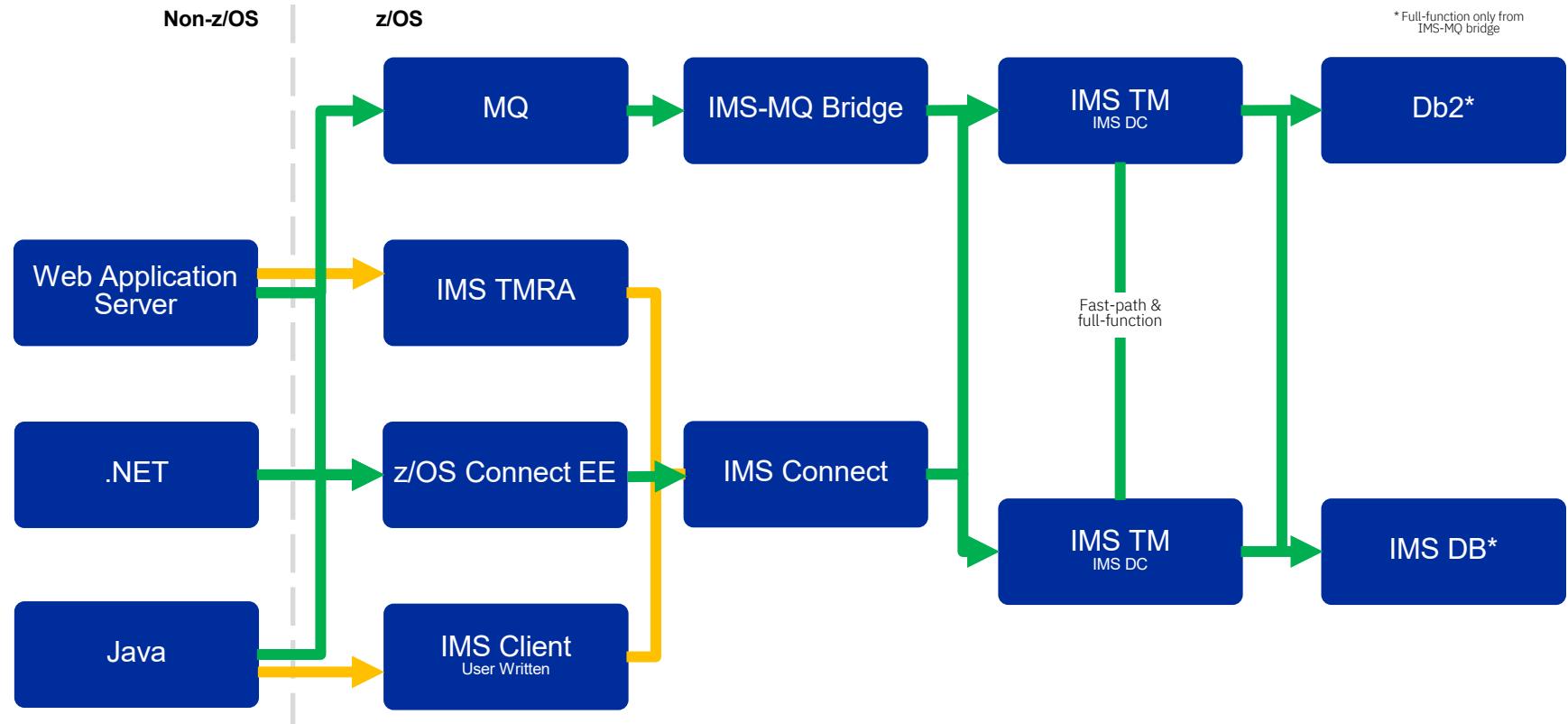
Example Instana on z/OS architecture for tracing



CICS application flows traced today by Instana



IMS application flows traced today by Instana



Transactions details surfaced

CICS

- Task number** – 5 digit number specific to a CICS
- User ID** – the user ID used to drive the transaction within CICS
- Elapsed time** – the time CICS spent in processing the transaction
- Transaction name** – name of CICS transaction processing request
- Inbound caller** – for Web Services, the specific URL used to drive work down in to CICS, for MQ, the MQ queue manager
- ABEND code** if transaction fails

IMS

- Elapsed time** – the time IMS spent in processing the transaction
- Event key** – unique identifier for a single IMS transaction
- Transaction name** – name of IMS transaction processing request
- ABEND code** if transaction fails

z/OS Connect EE

- Request ID** – Unique to each zCEE transaction
- Elapsed time** – time between zCEE receiving a request and response
- Service name** – name of the service driven to zCEE
- HTTP method** – GET, PUT, POST, DELETE, etc.
- Request payload size** – length of the input JSON payload
- HTTP response code** if not 200
- Response payload length** – length of the response JSON payload

Backends

Databases, Web Services, MQ Puts

- Elapsed time** – the time the backend spent processing the transaction
- Call count** – the number of calls made to the backend by the related middleware
- MQ-specific details** – the MQ message ID, correlation ID, and put time are also surfaced if being called by an IMS application

Summary

Instana is focused on being the primary observability platform for enterprise clients to accelerate their transformation to DevOps and the hybrid cloud by providing:

- **Automatic discovery and context** for hybrid cloud environments
- A single place to store and access all Observability data, in a user- and application-centric way
- Insights, shared understanding, and collaboration for **fast accurate IT and business decisions**
- Supporting and **driving open standards** in and around Observability

These capabilities are inclusive of essential enterprise platforms such as IBM Z delivering **end-to-end insight from mobile to mainframe** to reduce time to isolate and resolve application problems



Resources

Learn more about Observability and Instana on z/OS



Watch a video of Instana on z/OS capabilities ([LINK](#))

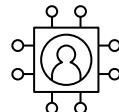


Visit Instana on z/OS microsite ([LINK](#))

Understand how IBM can help you on your journey to AIOps on Z



Read the Journey to AIOps handbook
(<http://ibm.biz/AIOps-handbook>)



Take a free AIOps on Z maturity assessment

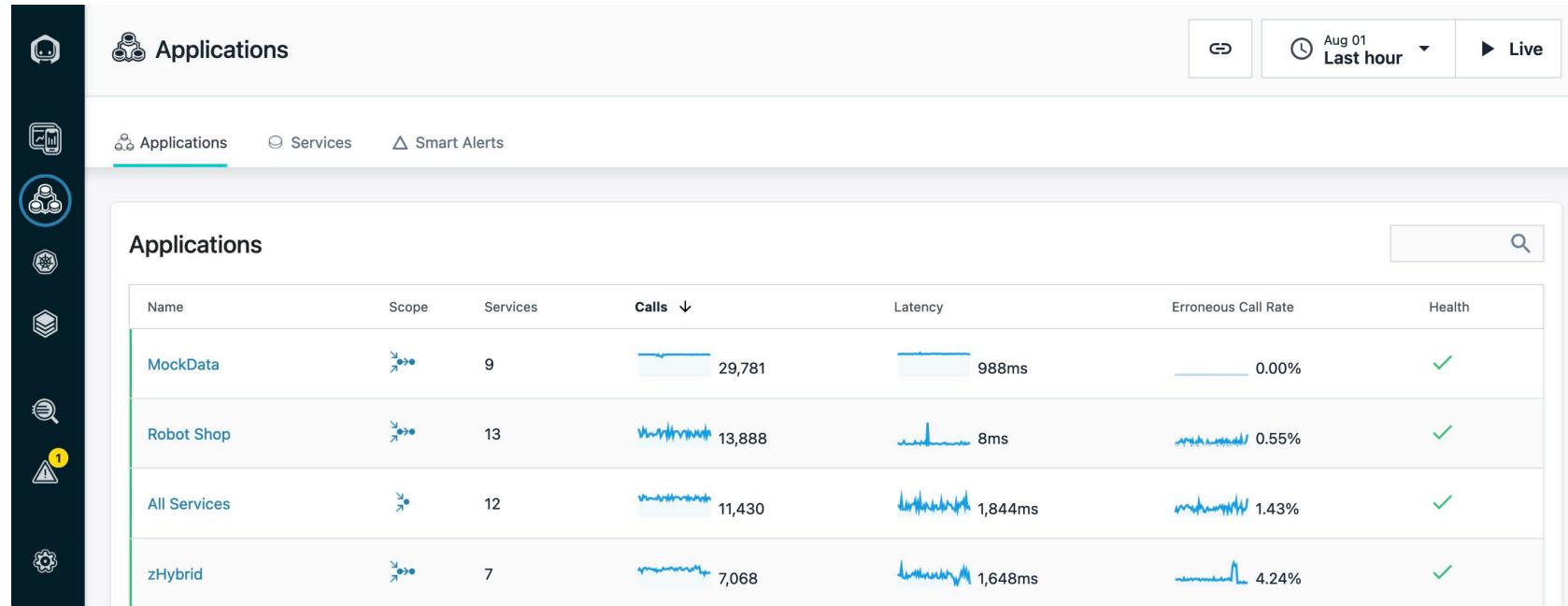
Ask your IBM representative or contact [Luke De Kansky](#) (WW Sales Lead – AIOps on IBM Z)

Engage with IBM experts on AIOps

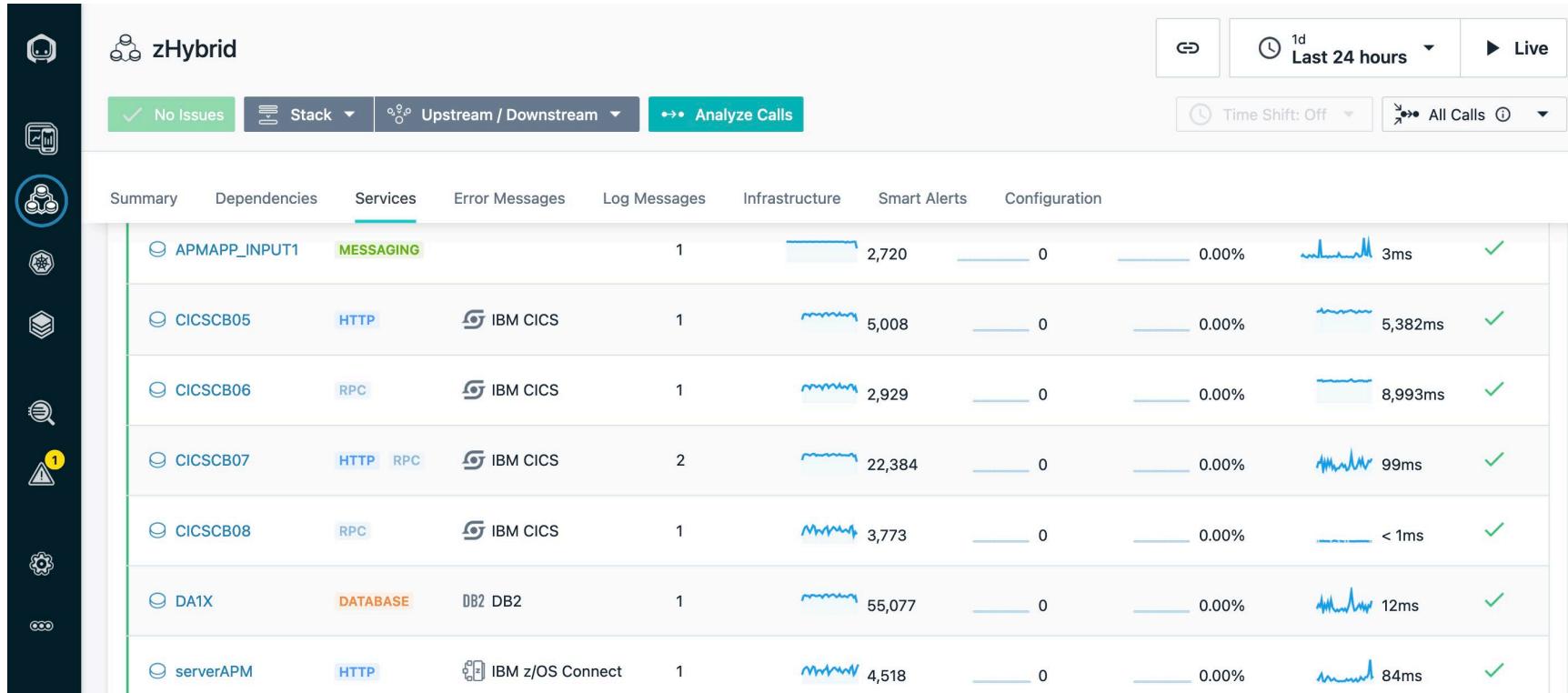


Join the IBM Z AIOps community
(<http://ibm.biz/AIOps-Community>)

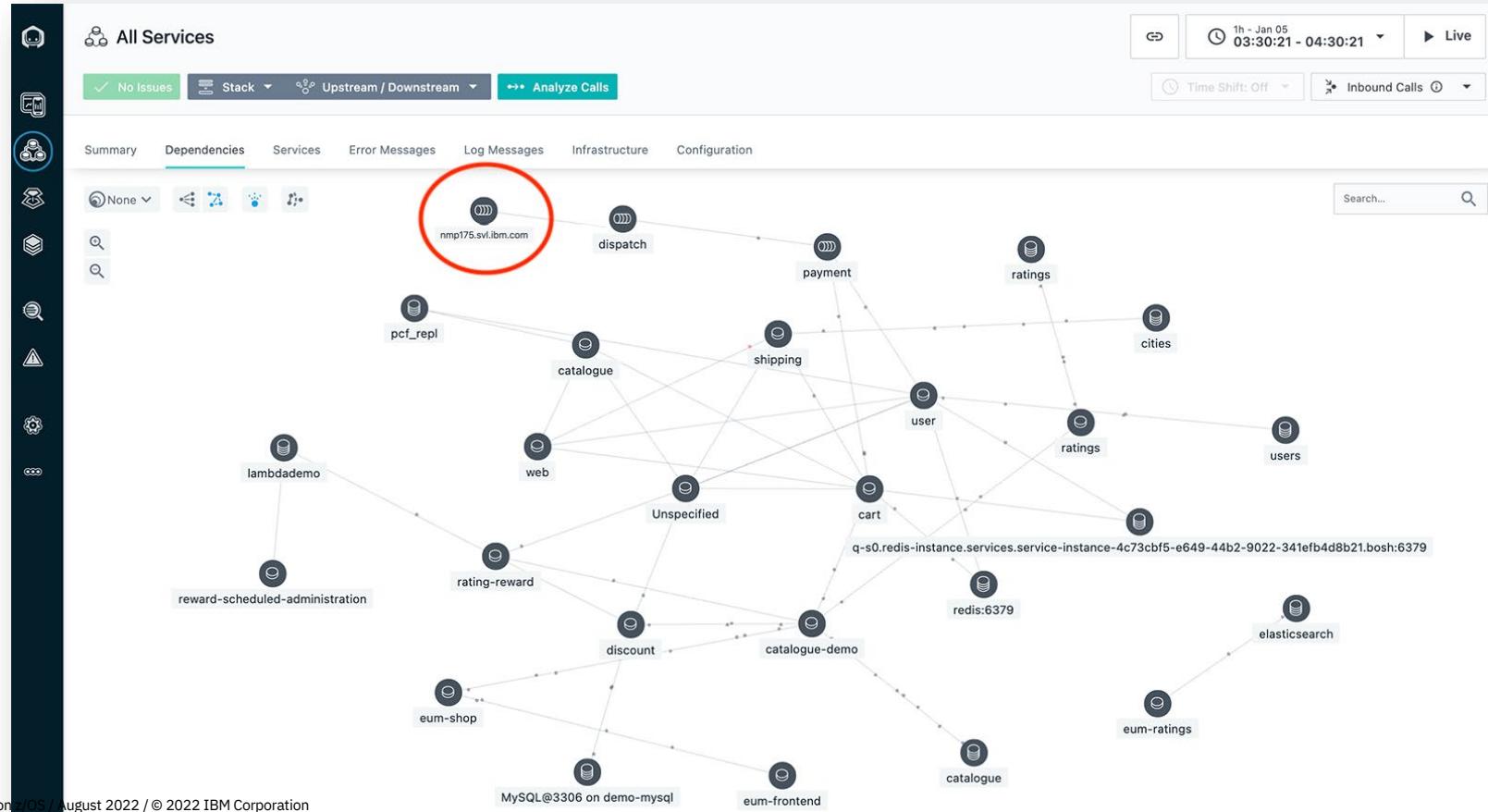
Instana Applications



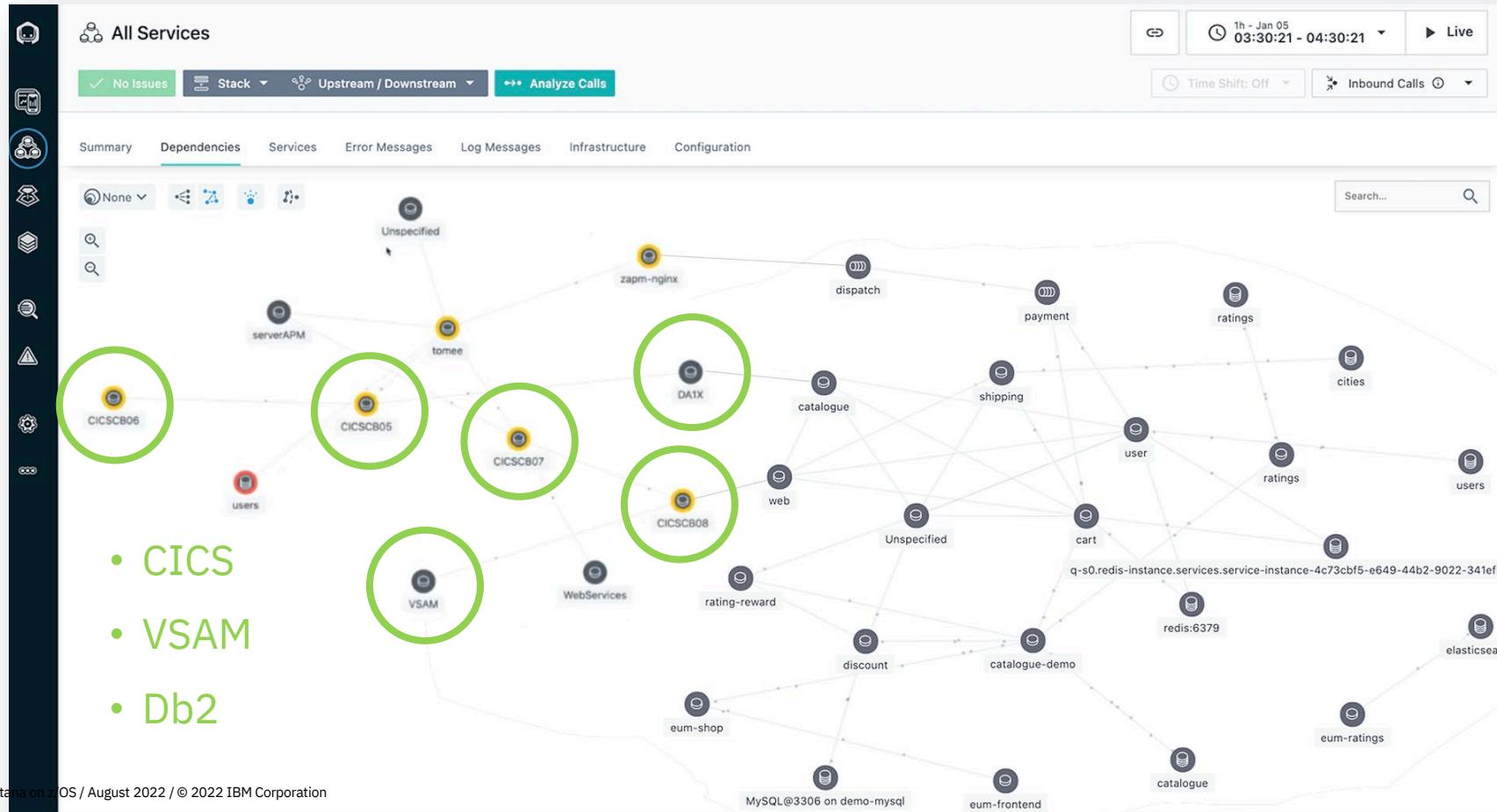
Services as participants in application



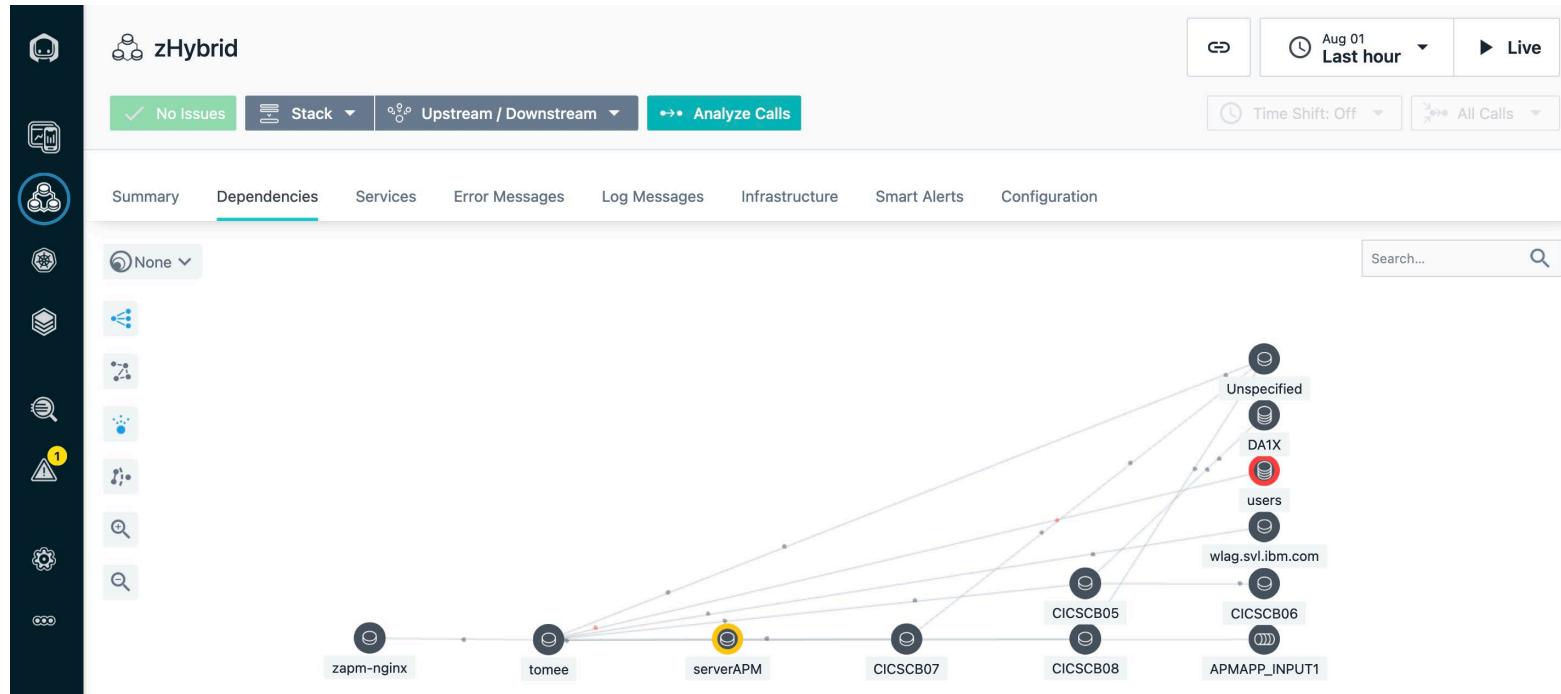
Critical business application without z/OS visibility



Critical business application with z/OS visibility



Application flow



Analyze calls

Analytics > Applications / Calls

Filter: Application Name = zHybrid AND Service Name = CICSCB07

Group: Endpoint Name

Latency: From 14:09:00 Aug 01 To 14:24:00 Aug 01

Erroneous: No suggestions

HTTP Status

Applications

Services

Endpoints

Chart: Calls Overview Calls, Erroneous Call Rate, Latency

Endpoint.Name	Earliest Timestamp	Calls	Latency	Erroneous Calls Rate
cics /CICS	2022-08-01, 14:10:00	Σ 128	avg 293ms	0.00%
CSMI	2022-08-01, 14:12:00	Σ 21	avg 1ms	0.00%

Drill down

Analytics > Calls

GET /Approve_Order Trace ID: 1da5e3e5534c690c

Download

zapm-nginx	upstream za	20ms
CICSCB07	cics /CICS	18ms
tomee	GET /HelloHi	18ms

DESTINATION cics /CICS of CICSCB07

Details

Type	CICS HTTP Call
Category	http
Host	CICSCB07
Request Path	/CICS/CWBA/CHU\$WB1G
Method	cics

CICS Attributes

CICS User ID	TDUSER
CICS Task Number	12561
CICS Region	CICSCB07

Infrastructure Correlation missing

Colorize by Endpoint Technology

Technology

20ms

18ms

18ms

Infrastructure Correlation missing

Integration of Metrics into Instana via OMEGAMON

OMEGAMON is used everyday by z/OS Subject Matter Experts to deep-dive problems and take action to resolve.

Integration with Instana allows key operational metrics about infrastructure to be shared directly within Instana UI providing additional infrastructure context without deployment of more collection agents.

- Single source of z/OS infrastructure metrics used by multiple end-user
- Improve context hand-over between users
- Keep processing overheads



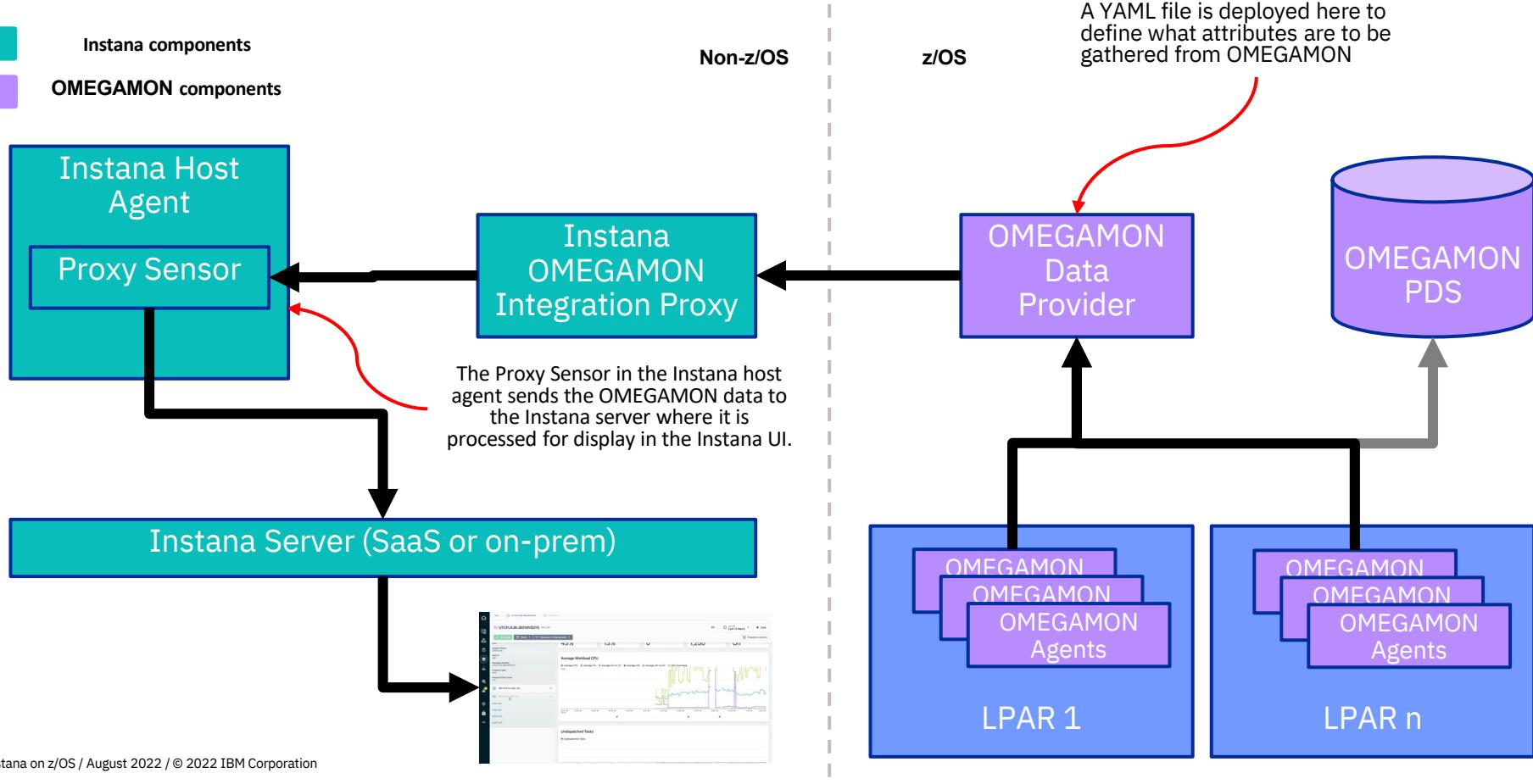
I can see a problem occurring within CICS according to my tracing information. I wonder if there is a persistent issue with that region that might be causing this



We gather a lot of metrics via OMEGAMON. We can share some of this information directly with you to enable more context in assessing a potential problem before asking for help

Instana + OMEGAMON architecture

- Instana components
- OMEGAMON components



Instana Infrastructure

The screenshot shows the Instana Infrastructure dashboard for an IBM z/OS environment. The main view displays a 3D cylinder representing a sysplex, labeled "MCMPLEX1". A tooltip for the cylinder indicates it has 2/6 nodes. The dashboard includes a sidebar with various monitoring icons and a central panel with detailed system information.

Infrastructure

Map Comparison Table ⓘ zos

Open Dashboard ✓ No issues

IBM z/OS

Workload Management Mode Goal

Sysplex Name MCMPLEX1

SMF ID LP11

Managed System MCMPLEX1:LP11:MVSSYS

Product Code km5

Physical CPU Count 69

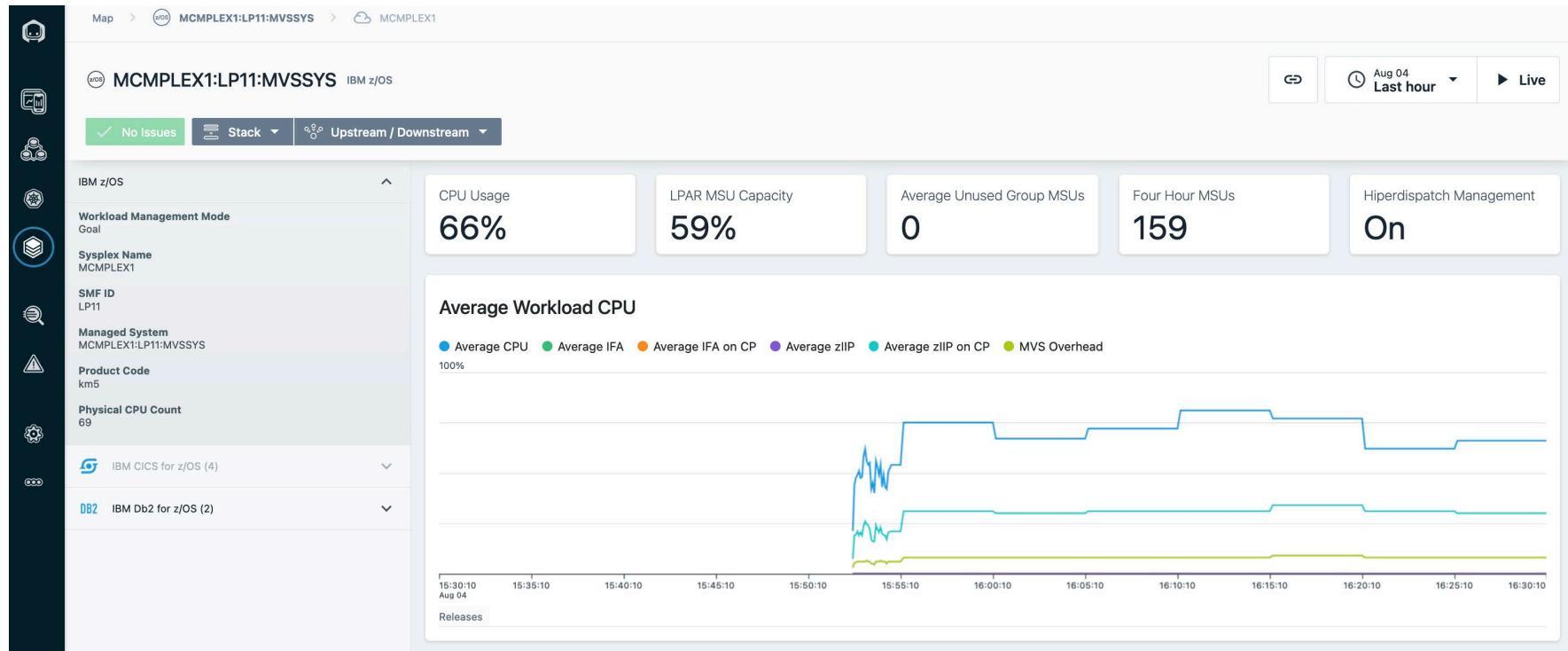
IBM CICS for z/OS (4)

Aug 04 Last hour Live

Save Filters

More Options

z/OS LPAR overview sourced from OMEGAMON on z/OS



CICS region overview sourced from OMEGAMON for CICS

Map > MCMPLEX1:LP11:MVSSYS > LP11:CICST11A

LP11:CICST11A IBM CICS for z/OS

No Issues | Stack | Upstream / Downstream

Aug 04 Last hour | Live

IBM CICS for z/OS

Origin Node LP11.CICST11A

System ID LP11

CICS Region Name CICST11A

CICS Version 7.3.0

CICSPlex Name PLEX11

CPU Utilization 0

Storage Violations 0

Enqueue Waits 0

AIDS 0

ICES 6

SOS No

Transaction Rate

Transaction Rate

6

Releases

Maximum Tasks Percent

Maximum Tasks Percent

1

Releases

Rates

CPU Utilization IO Rate Page Rate

220

Performance

Worst Region Performance Index Queued Remote Requests

2 kB

Db2 region overview sourced from OMEGAMON for Db2

Map > MCMPLEX1:LP11:MVSSYS > DB2 DC11:LP11

DB2 DC11:LP11 IBM Db2 for z/OS

No Issues | Stack | Upstream / Downstream

Aug 04 Last hour | Live

IBM Db2 for z/OS

MVS System LP11

Origin Node DC11:LP11:DB2

DB2 Subsystem DC11

Product Code kd5

Lock Conflict Count

0

Current Thread Count

6

Lock Conflict Count

Lock Conflict Count

Releases

Db2 System States

Current Thread Count Transactions Per Second

6

Page Reads

Pages Read From BPS Pages Read From DASD

340,000

Storage

ECSA Used By DB2 Real Storage Used By Db2

1B

Link from transaction trace to infrastructure

The screenshot illustrates the integration between Instana's application monitoring and transaction tracing features.

Left Panel (Application Monitoring): Shows the IBM CICS for z/OS instance JAO:CICS1AAA. Key metrics displayed include:

- CPU Utilization: 0
- Storage Violations: 0
- Enqueue Waits: 0
- AIDS: 0
- ICES: 6
- SOS: N

Below these are two line charts: "Transaction Rate" and "Maximum Tasks Percent".

Middle Panel (Analytics): Displays a list of 5 calls for trace ID 35ef2239282a27ff, all originating from cics /CICS/CWBA/UOWID03A. The calls are:

- cics /CICS/CWBA/UOWID03A (2022-06-02, 09:07:47, 5,127ms)
- cics /CICS/CWBA/UOWID03A (2022-06-02, 09:08:55, 5,043ms)
- cics /CICS/CWBA/UOWID03A (2022-06-02, 08:58:50, 5,142ms)
- cics /CICS/CWBA/UOWID03A (2022-06-02, 07:48:13, 5,092ms)
- cics /CICS/CWBA/UOWID03A (2022-06-02, 07:34:47, 5,263ms)

Right Panel (Transaction Tracing): The "Calls" section shows the detailed trace for the first call. A red arrow points from the "Infrastructure" section of the trace details back to the "Performance" chart in the monitoring panel.

Trace Details:

- SOURCE:** Unspecified
- DESTINATION:** cics /CICS of CICS1AAA
- Technology:** CICS HTTP Call
- Type:** http
- Category:** CICS
- Host:** CICS1AAA
- Request Path:** /CICS/CWBA/UOWID03A
- Method:** cics
- CICS Attributes:**
 - CICS User ID: CICSUMER
 - CICS Task Number: 00176
 - CICS Region: CICS1AAA

Infrastructure: JAO:CICS1AAA

Statement of Direction – April 2022



New **Statement of Direction** issued April 2022 details planned enhancements to Instana capabilities including:

- Ability to support the deployment and execution of the Instana platform on Linux on IBM Z
- Integration of resource metrics sourced directly from IBM Z OMEGAMON agents
- Transaction tracing inbound to z/OS via IBM MQ flowing into CICS and IMS triggering subsequent updates in IBM Db2.

Read full Statement of Direction here:

https://www.ibm.com/common/ssi>ShowDoc.wss?docURL=/common/ssi/re_p_ca/7/897/ENUS222-177/index.html

Delivered

