

How much does an hour of downtime
cost the average business?

IBM

So how much are organizations loosing for every hour of downtime?

- 98% of organizations indicated costs had risen to over \$100,000
- 81% of those who participated indicated costs over \$300,000
- 33% of the enterprises indicated an hour of downtime can cost \$1-5 Million.

IBM

IBM Instana for IBM Power

Full-Stack Observability

—
Nick Gann



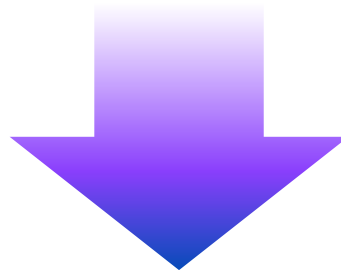
The impact of a 1-second delay

1_{sec}



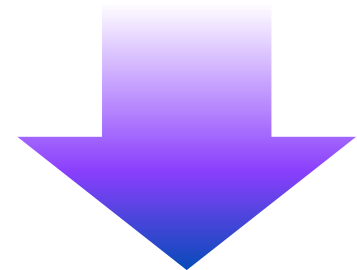
**Application
Latency**

7%



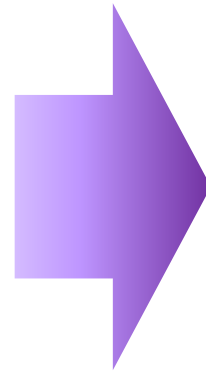
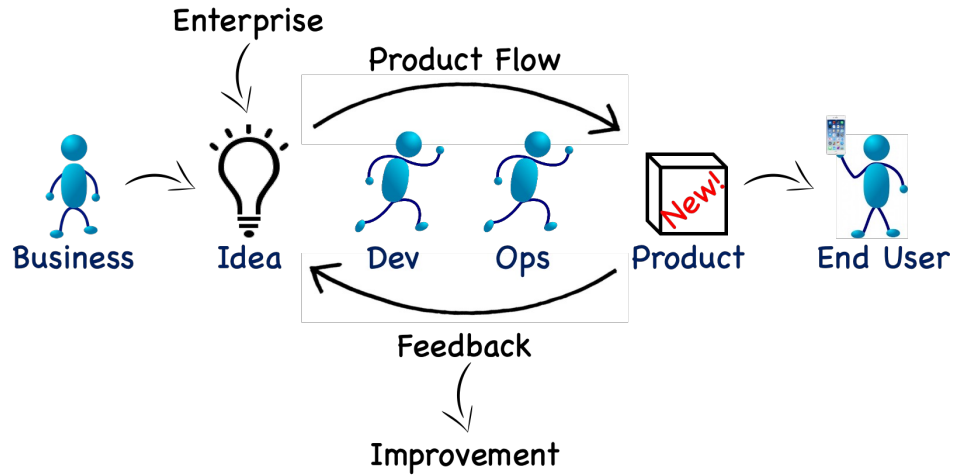
**Customer
Conversion**

16%



**Customer
Satisfaction**

Modernizing apps come with new challenges

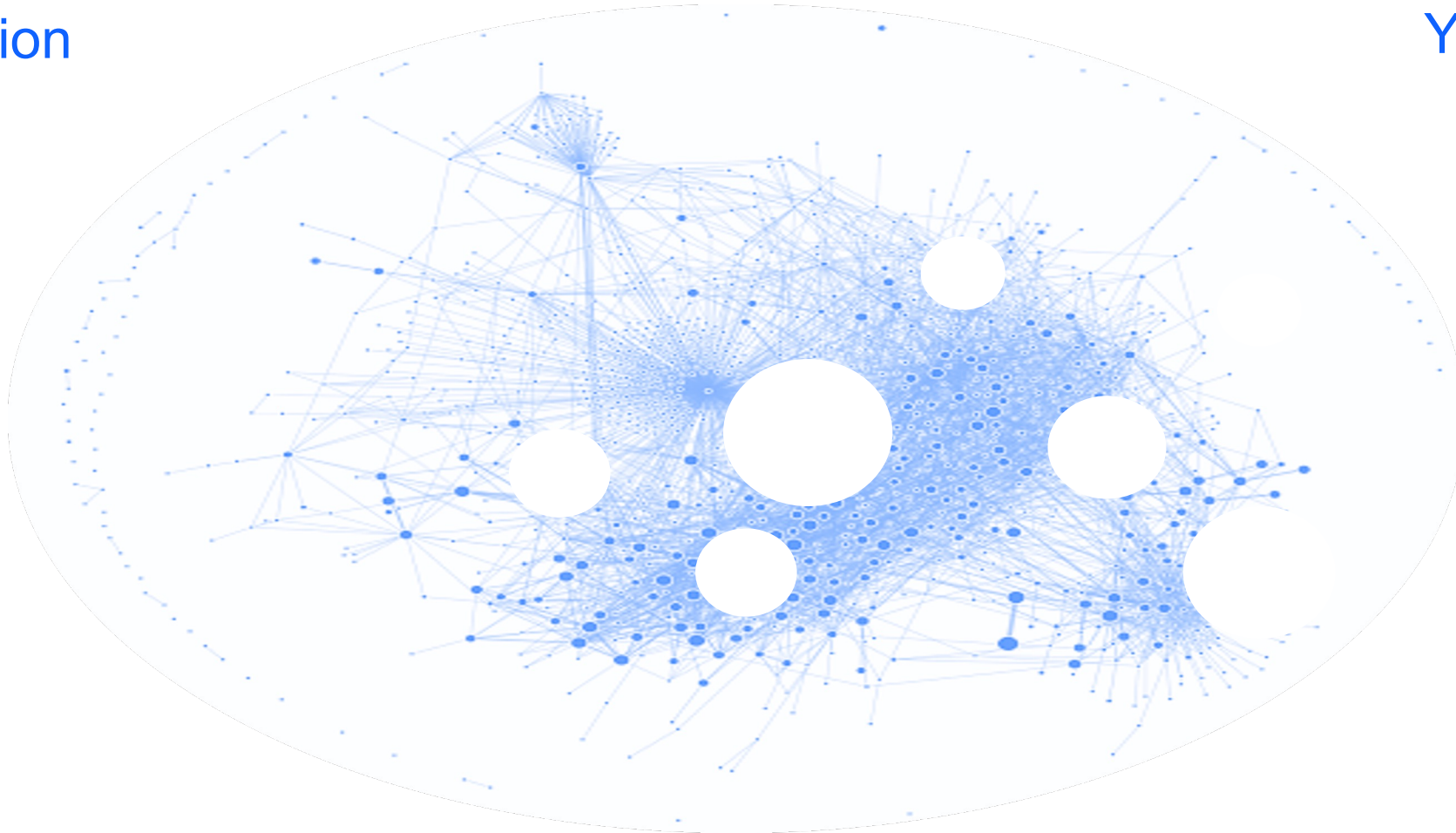


- ↑ Infrastructure complexity
- ↑ Number of technologies used
- ↑ Dynamic changes in apps
- ↑ Skills gap
- ↓ Visibility

Application modernization, frequent releases, and use of cloud services creates a challenge for IT Operations

Traditional monitoring lacks full visibility

Modernization
increases
complexity



You can't fix
what you
can't see

Observability at its best

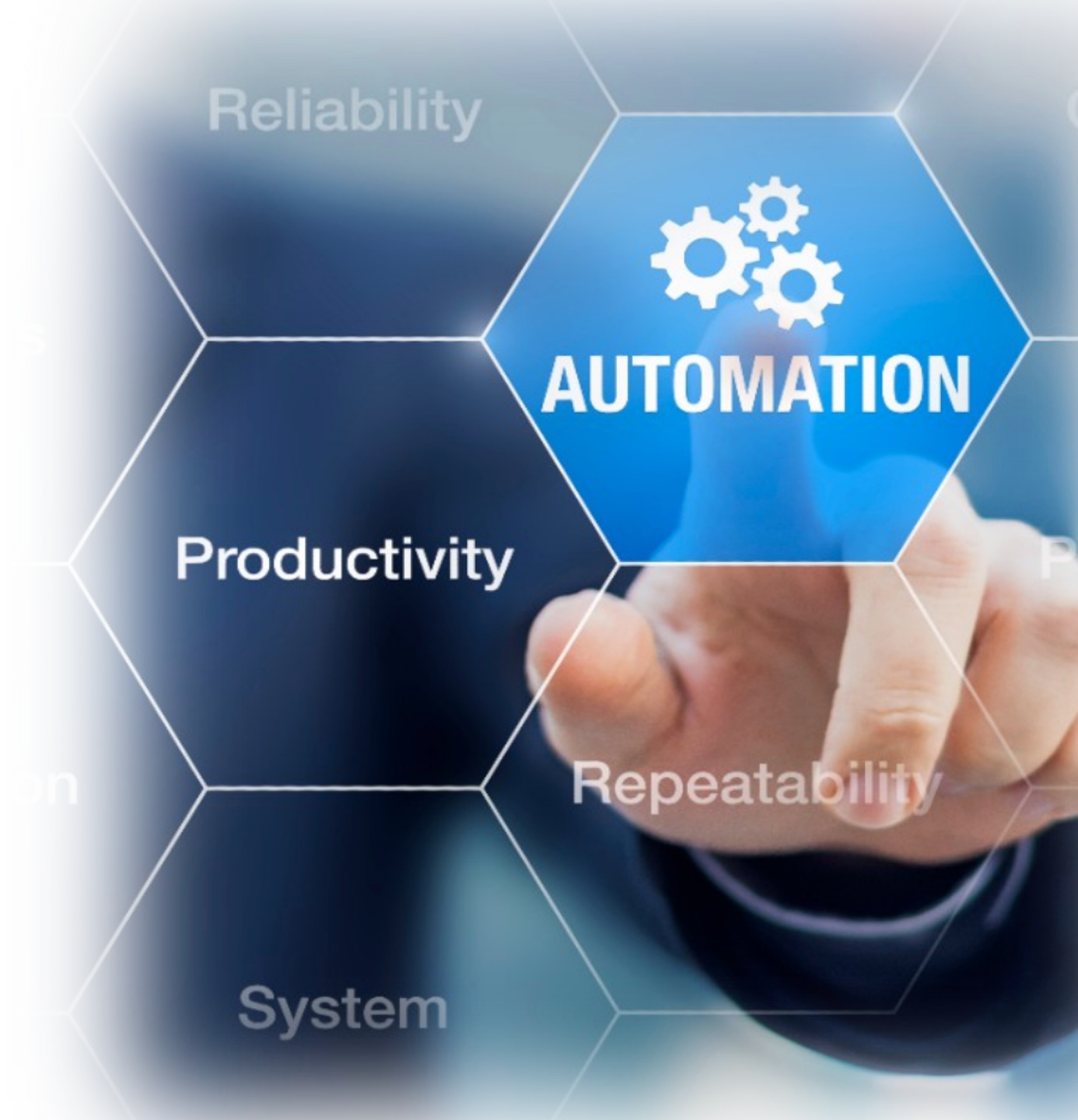
Complete and accurate
data fidelity

Real-time **granularity**



Observability at its best

**Automated
continuous
discovery**





Observability at its best

Intuitive user interface
Ease of use

Observability at its best

Support **modernized apps**
- cloud, containers,
microservices

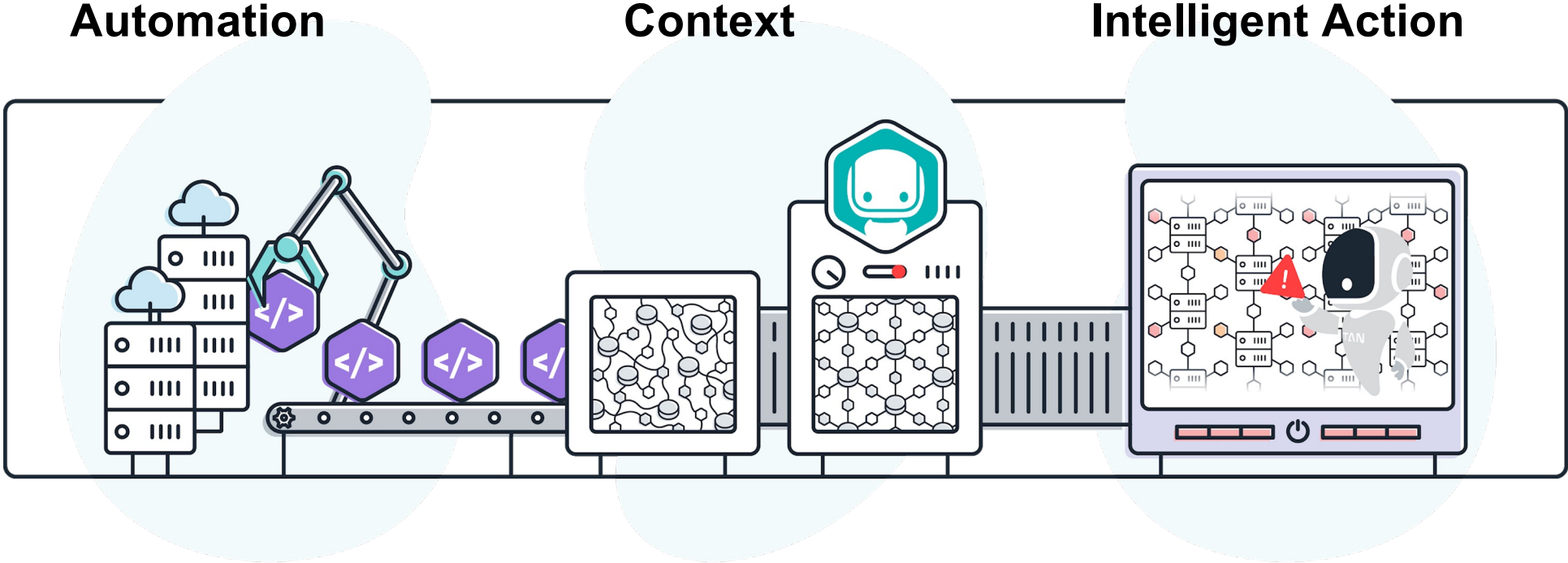


Observability at its best

Transparent and
predictable pricing



IBM Instana Capability Pillars



✓ Risk Reduction

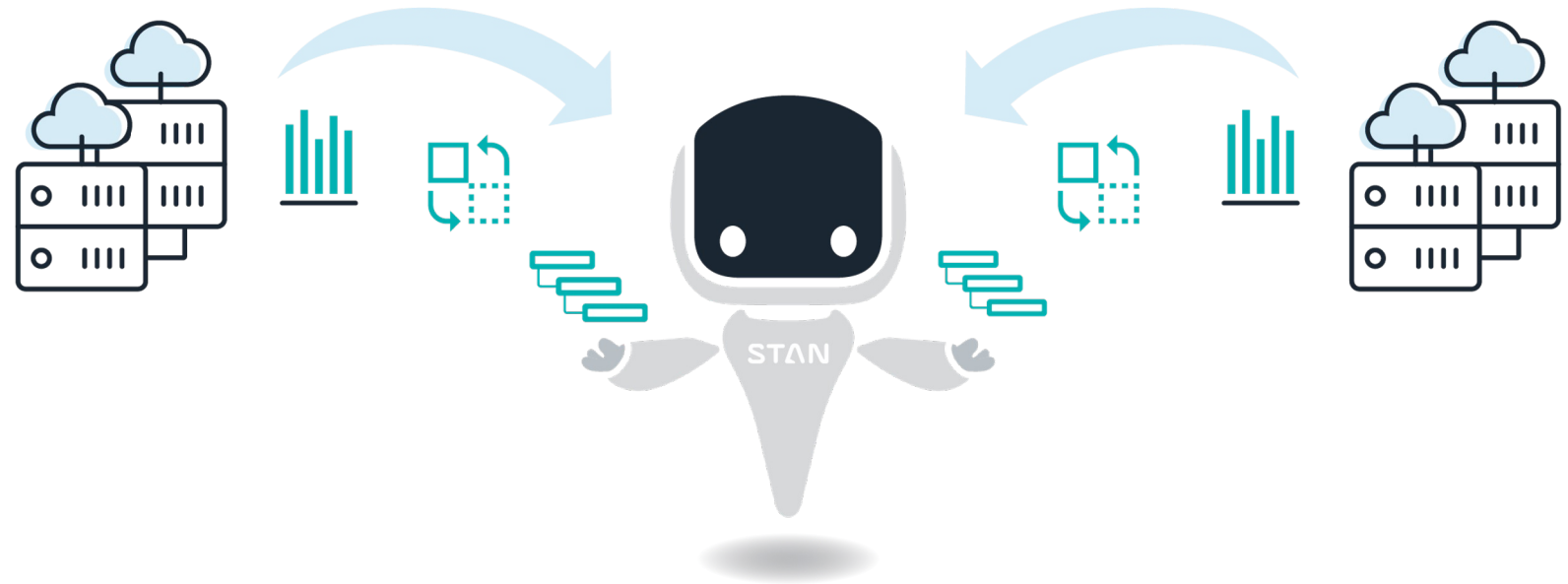
✓ Accelerated Innovation

✓ Efficiency Gain

Automation

Automated full-stack application visibility - including real-time change detection, mapping, tracing and profiling - all with 1 second granularity and no sampling.

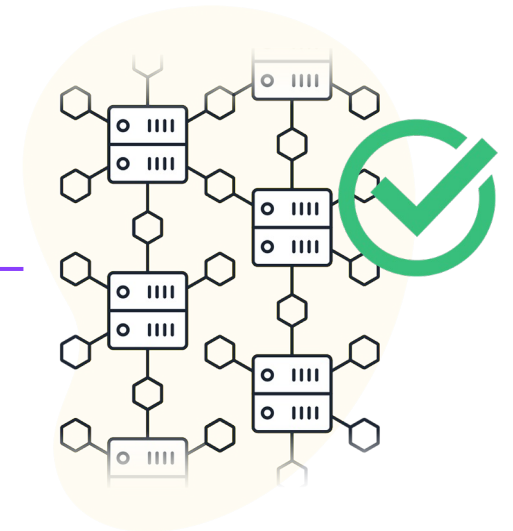
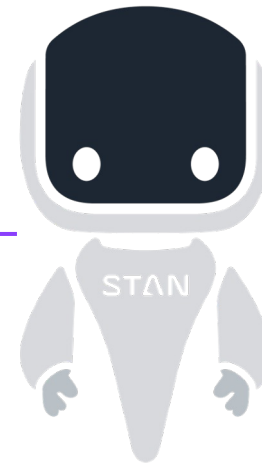
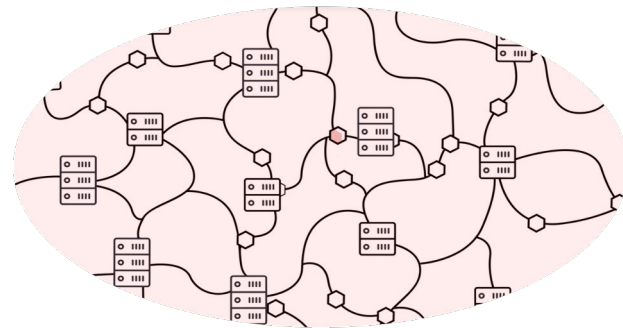
- Automatic Continuous Discovery
- Complete, Accurate Data (no sampling)
- Proactive Automated Health Monitoring
- OTB Curated Dashboards



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.

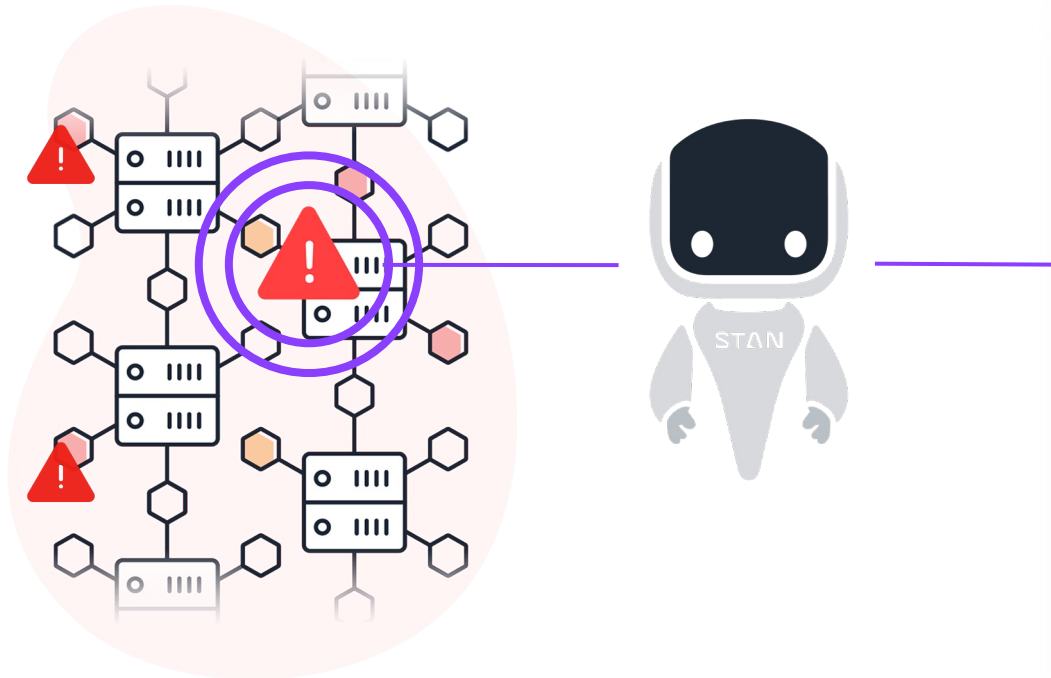
- Dynamic graph
- Automatic Anomaly Detection
- Application Perspectives
- Open Source & Logging Integrations



Intelligent action

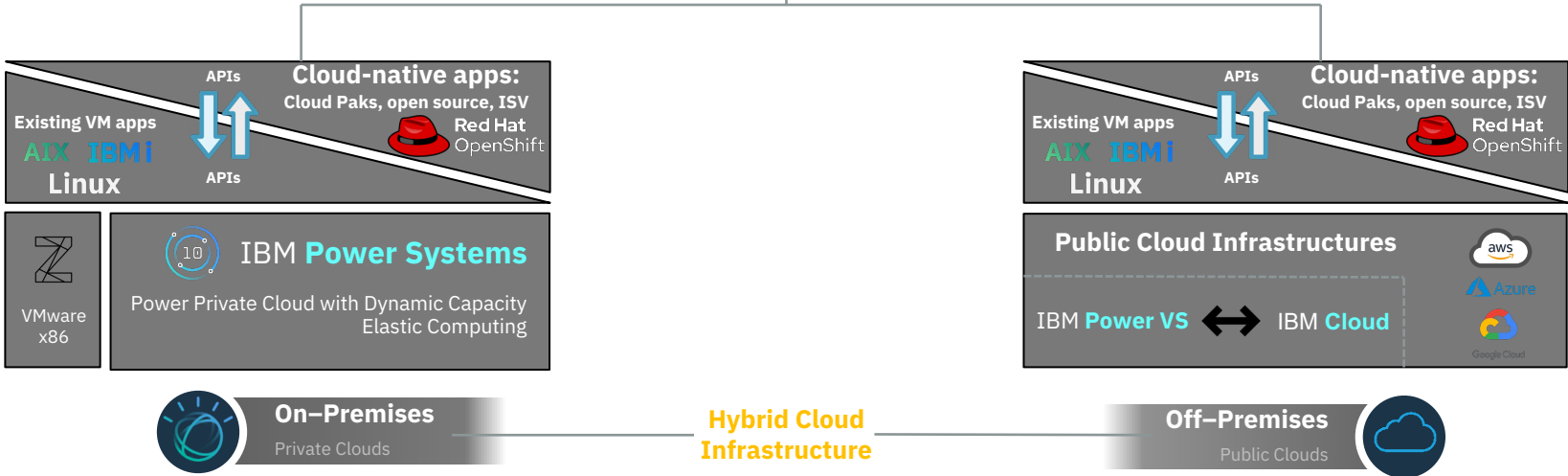
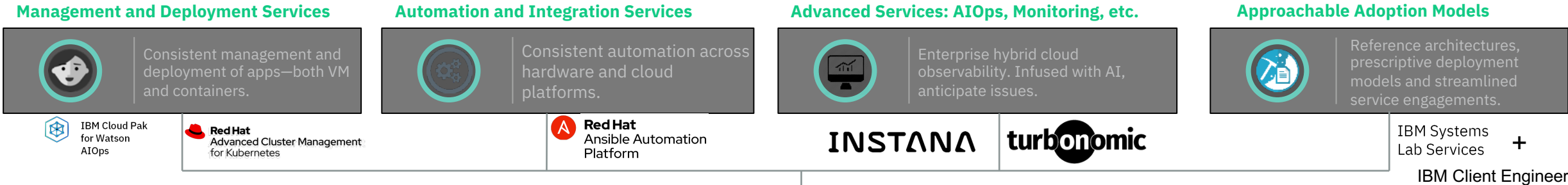
Resolve issues faster with an understanding of contributing factors. Analyze every user request from any perspective to quickly resolve bottlenecks and optimize performance.

- Root Cause Analysis with Correlated Alerting & Incident Reporting
- Guided Troubleshooting
- Immediate Feedback of Pipeline & Canaries
- Unbounded Analytics

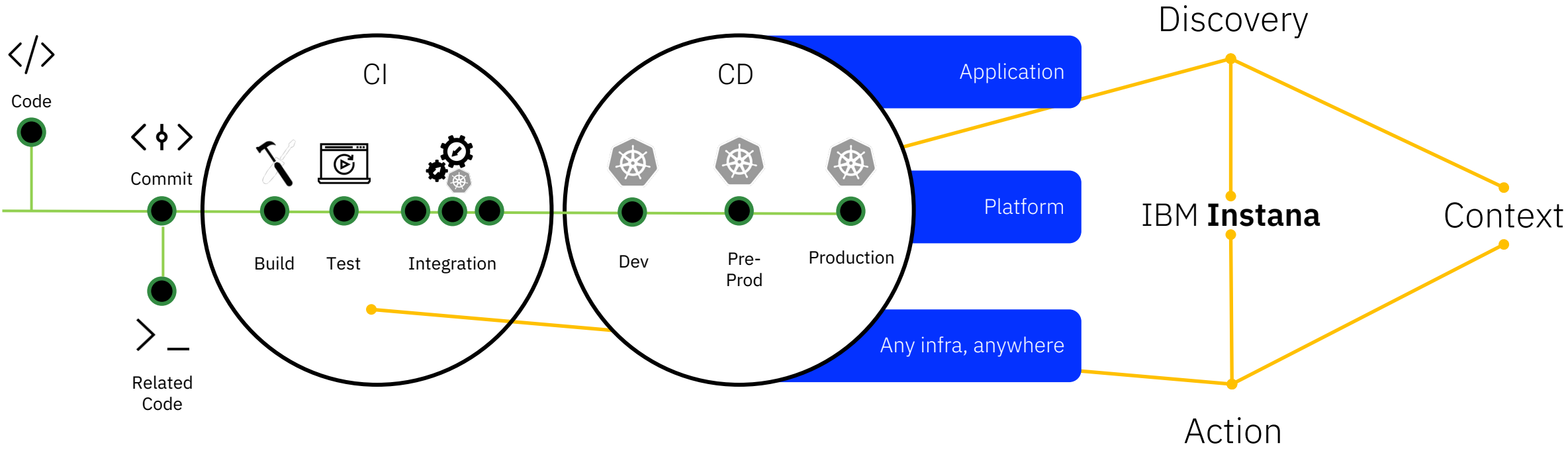


Hybrid Cloud Platform with IBM Power

Built on OpenShift **Managed with IBM Cloud Pak Technology** **Automated with Ansible** **Infused with AI**



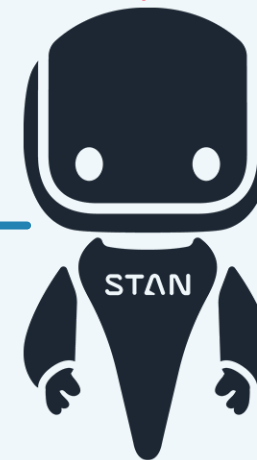
Optimize Across the Application Lifecycle



Continuously assure application health — [don't make it an afterthought](#) — build it into your systems and processes to ensure performance across the entire application lifecycle!

Observability for IBM Power

- Monitor Power Infrastructure:
 - AIX and Linux LPARs
 - IBM i
 - HMC Sensor
 - Frame
 - VIOS
 - LPARs
- Cloud Native
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command DATABASE

SOURCE catalogue-demo

Details & Stack Trace

Type	MongoDB query
Category	database
Service	mongodb:27017
Namespace	catalogue.\$cmd
Query	<pre>// Command: command { "find": "products" }</pre>

Stack Trace

```
executeWrappedCommandProtocol in com.mongodb.operation.CommandOperation:
call in com.mongodb.operation.FindOperation$1:701
withConnectionSource in com.mongodb.operation.OperationHelper:462
withConnection in com.mongodb.operation.OperationHelper:406
execute in com.mongodb.operation.FindOperation:695
executeFindMultiInternal in org.springframework.data.mongodb.core.MongoTemplate:2380
doFind in org.springframework.data.mongodb.core.MongoTemplate:820
findAll in org.springframework.data.mongodb.repository.support.SimpleMongoReposit
invoke in org.springframework.data.repository.core.support.RepositoryComposition:24
invoke in org.springframework.data.repository.core.support.RepositoryFactorySupport
doInvoke in org.springframework.data.repository.core.support.RepositoryFactorySupport
lambda$invoke$3 in org.springframework.data.repository.core.support.RepositoryFactorySupport
invoke in org.springframework.data.repository.core.support.RepositoryFactorySupport
invoke in org.springframework.data.repository.core.support.SurroundingTransactionOp
```

SERVICE IMPACT

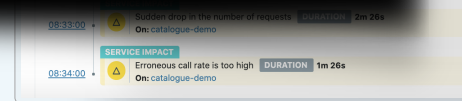
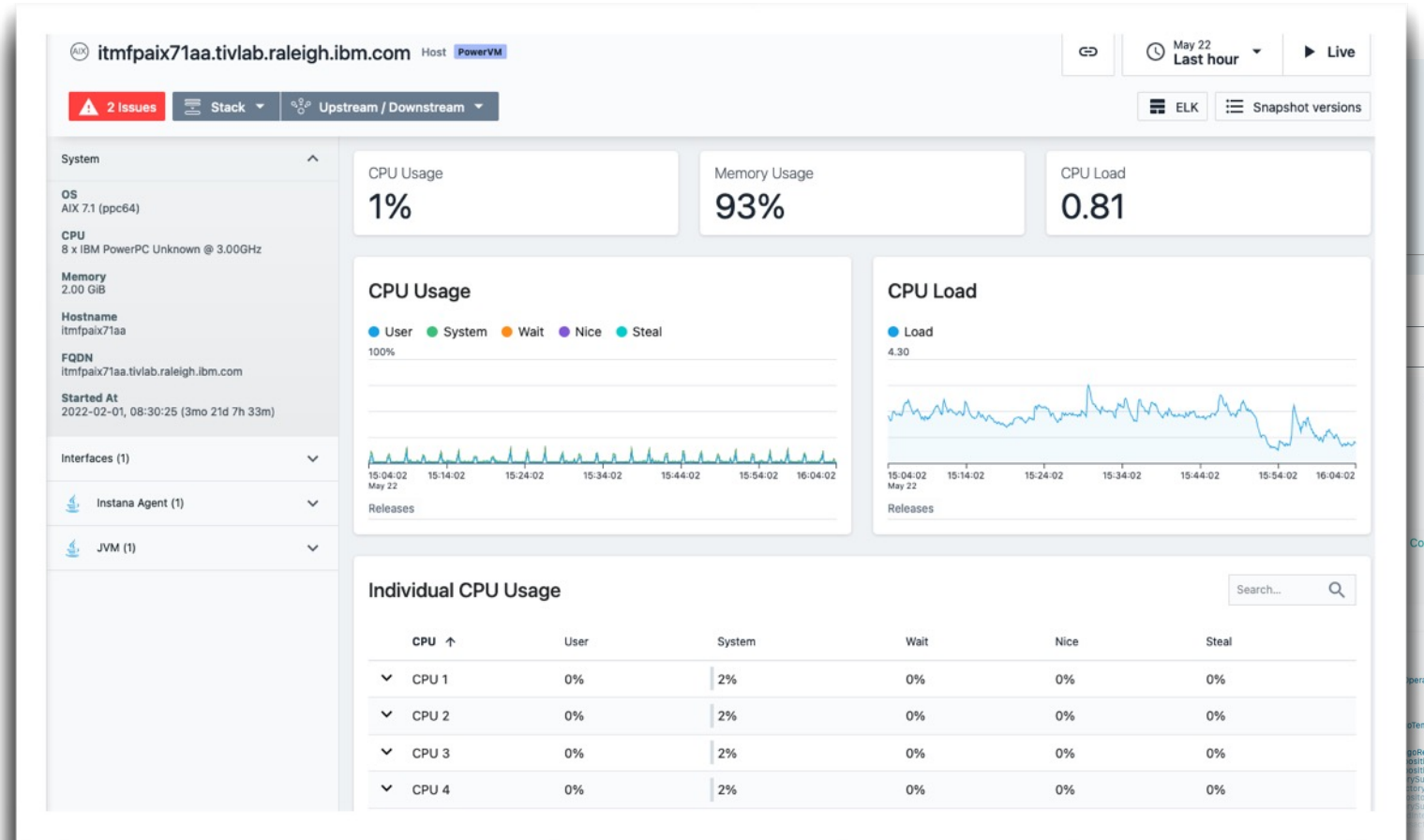
08:33:00 ⚠ Sudden drop in the number of requests DURATION 2m 26s
On: catalogue-demo

SERVICE IMPACT

08:34:00 ⚠ Erroneous call rate is too high DURATION 1m 26s
On: catalogue-demo

Observability for IBM Power: Power VS

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Observability for IBM Power: Power HMC

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Power HMCs > 9.212.142.9

9.212.142.9 Starting Sept 22 Sept 22 - Sept 29 Live

Systems

Name	Partitions	Virtual I/O Servers	Utilized Processing Units	Utilized Processing Units (%)	Memory Available (MB)	Memory Available (%)	Machine Type-Model	Machine Serial
ALPHA	15	2	19	94%	577,024	55%	9009-22A	78DC770
BETA	15	2	15	74%	624,384	60%	9009-22A	78DC780
DELTA	17	2	12	62%	498,688	48%	9009-22A	78DC7A0
EPSILON	14	2	13	65%	573,440	55%	9009-22G	78F3B40



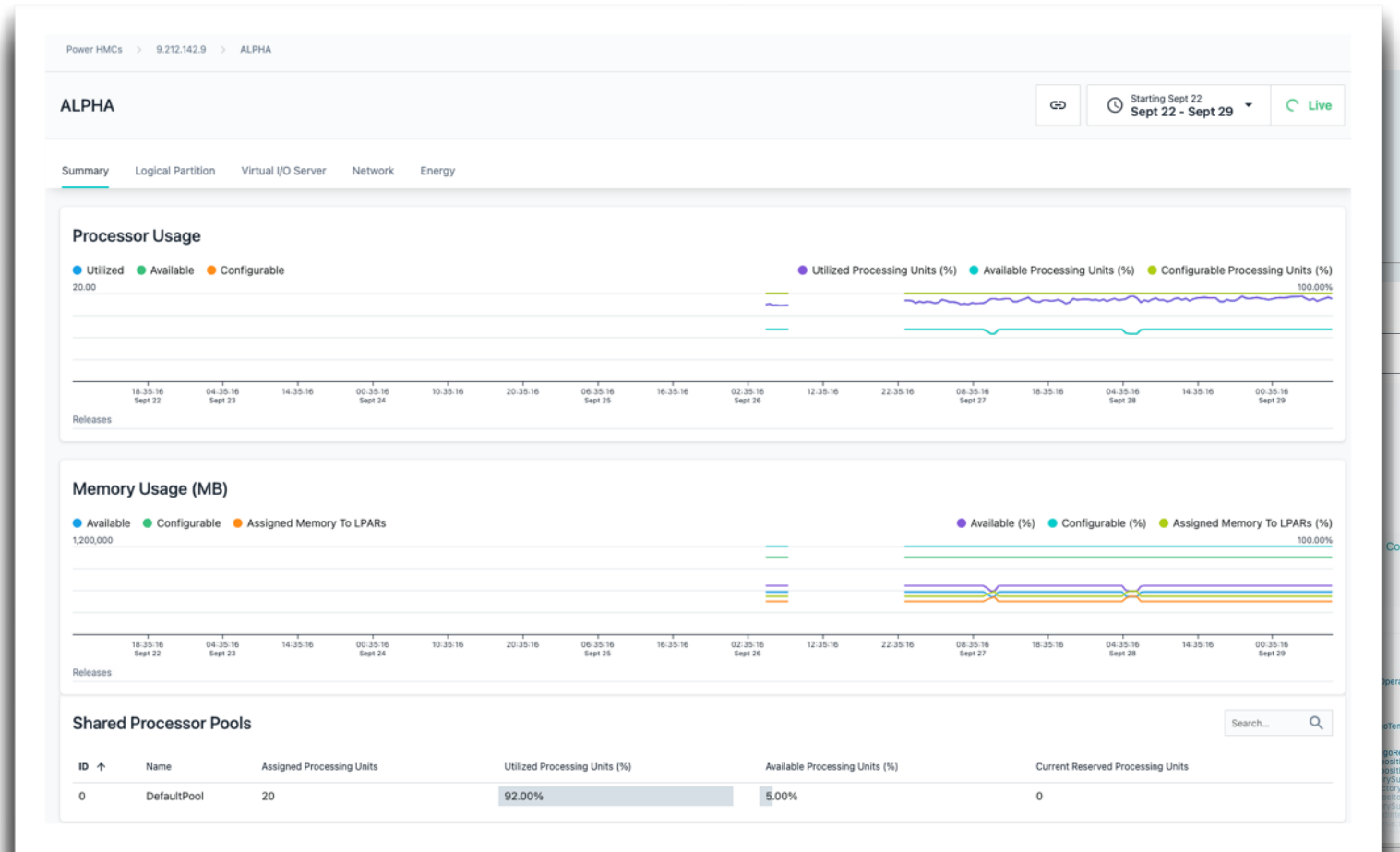
```
executeWrappedCommandProtocol in com.mongodb.operation.CommandOperation
call in com.mongodb.operation.FindOperation$1701
withConnectionSource in com.mongodb.operation.OperationHelper:462
withConnection in com.mongodb.operation.OperationHelper:406
execute in com.mongodb.operation.FindOperation:695
doFind in org.springframework.data.mongodb.core.MongoTemplate:2380
find in org.springframework.data.mongodb.core.MongoTemplate:820
findAll in org.springframework.data.mongodb.repository.support.SimpleMongoReposit
invoke in org.springframework.data.repository.core.support.RepositoryComposition:24
invoke in org.springframework.data.repository.core.support.RepositoryFactorySupport
doInvoke in org.springframework.data.repository.core.support.RepositoryFactorySupport
lambda$invoke$3 in org.springframework.data.repository.core.support.RepositoryFac
invoke in org.springframework.data.repository.core.support.RepositoryFactorySupport
invoke in org.springframework.data.repository.core.support.SurroundingTransaction
```

SERVICE IMPACT
Sudden drop in the number of requests **DURATION** 2m 26s
On: catalogue-demo

SERVICE IMPACT
Erroneous call rate is too high **DURATION** 1m 26s
On: catalogue-demo

Observability for IBM Power: Host

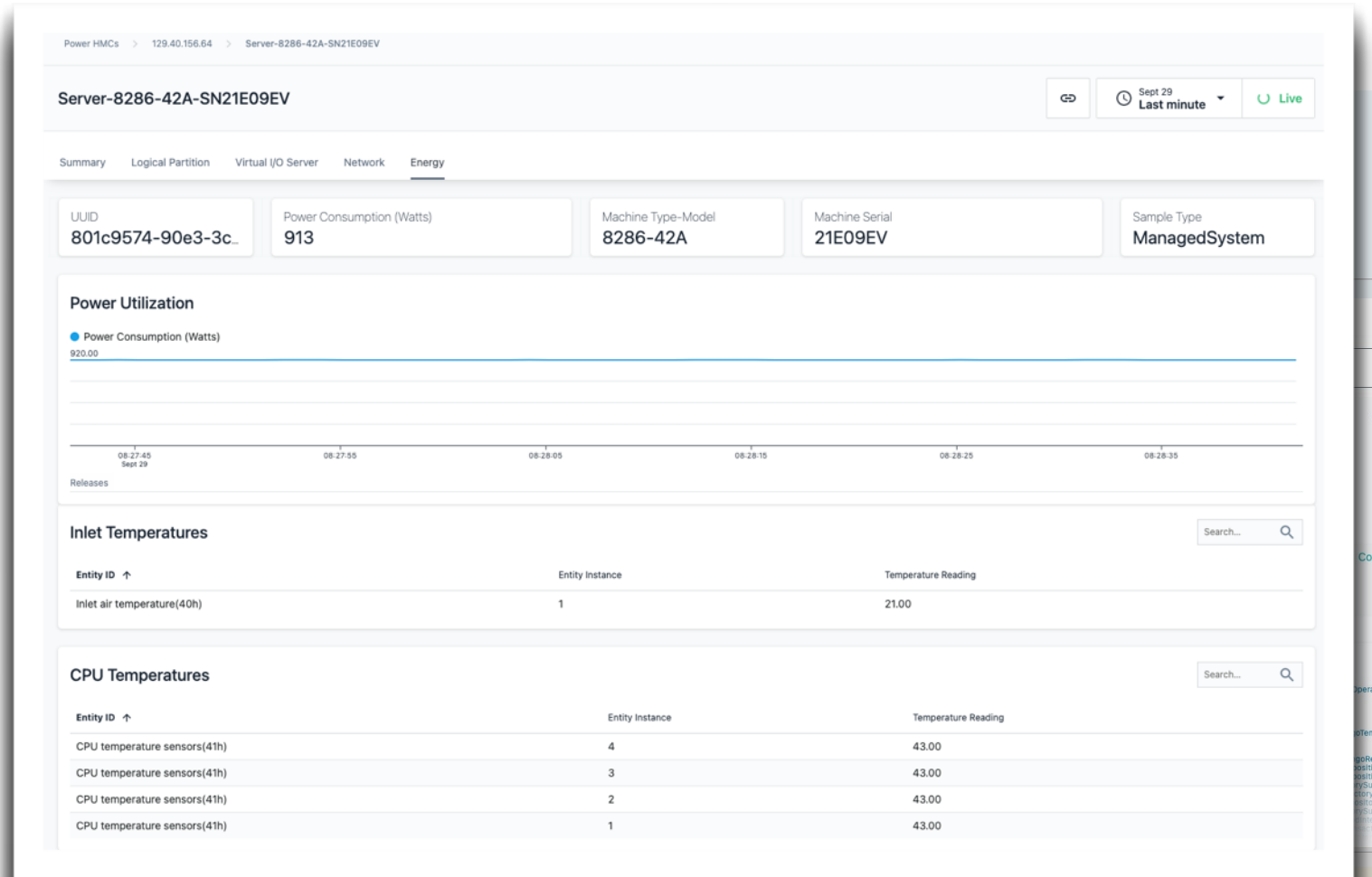
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08:34:00 ⚠️ Eroneous call rate is too high On: catalogue-demo DURATION 1m 26s

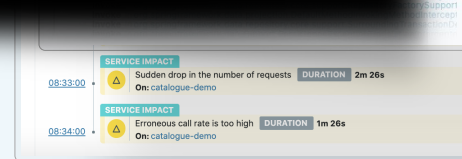
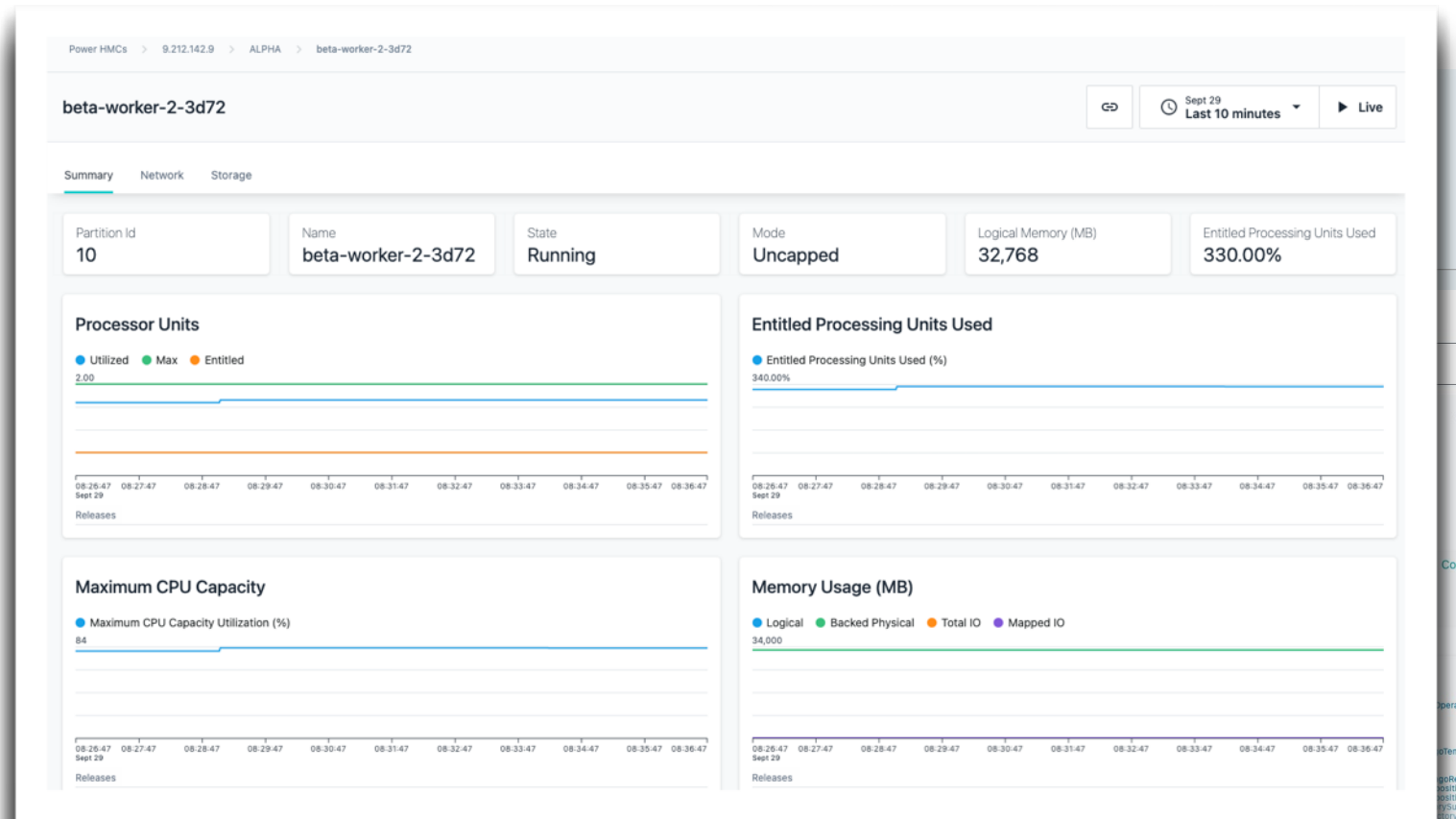
Observability for IBM Power: Host Energy Consumption

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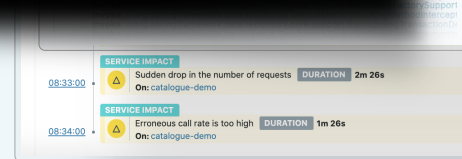
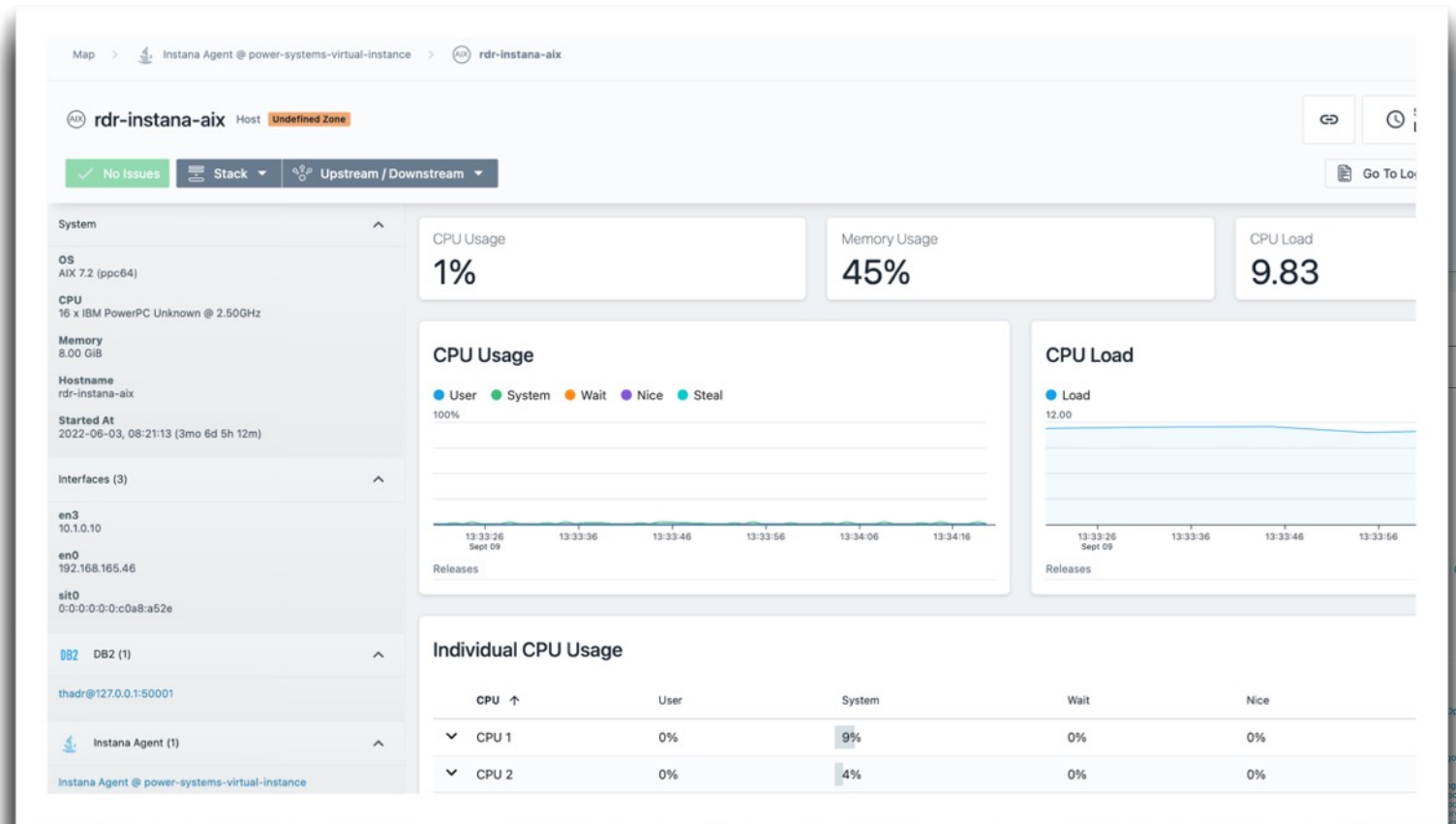
Observability for IBM Power: VM (LPAR)

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Observability for IBM Power: AIX VM

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Observability for IBM Power: AIX VM

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The screenshot displays the Instana monitoring interface for a host named 'rdr-instana-aix'. The top navigation bar includes the host name, a 'Host' label, and a 'Live' status indicator. Below the navigation, there are tabs for 'No Issues', 'Stack', and 'Upstream / Downstream'. The main content area is divided into two sections: 'Filesystems' and 'Network Interfaces', each with a search bar.

Filesystems Table:

Device	Mount	Options	Type	Capacity	Used ↓	Leaked	Inode usage
▼ /dev/repo00	/usr/sys/inst.images	rw,log=/dev/hd8	aix	7.53 GiB	99%	0.00 B	19%
▼ /dev/hd4	/	rw,log=/dev/hd8	aix	5.09 GiB	81%	0.00 B	4%
▼ /dev/hd2	/usr	rw,log=/dev/hd8	aix	7.28 GiB	28%	0.00 B	3%
▼ /dev/hd1	/home	rw,log=/dev/hd8	aix	5.00 GiB	14%	0.00 B	0%
▼ /dev/hd3	/tmp	rw,log=/dev/hd8	aix	3.00 GiB	13%	0.00 B	0%
▼ /dev/hd11admin	/admin	rw,log=/dev/hd8	aix	50.13 GiB	11%	0.00 B	0%
▼ /dev/hd10opt	/opt	rw,log=/dev/hd8	aix	50.38 GiB	10%	0.00 B	1%
▼ /dev/hd9var	/var	rw,log=/dev/hd8	aix	50.19 GiB	1%	0.00 B	0%
▼ /dev/livedump	/var/adm/iras/livedump	rw,log=/dev/hd8	aix	256.00 MiB	0%	0.00 B	0%

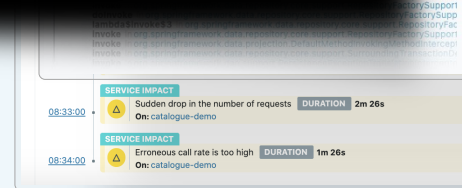
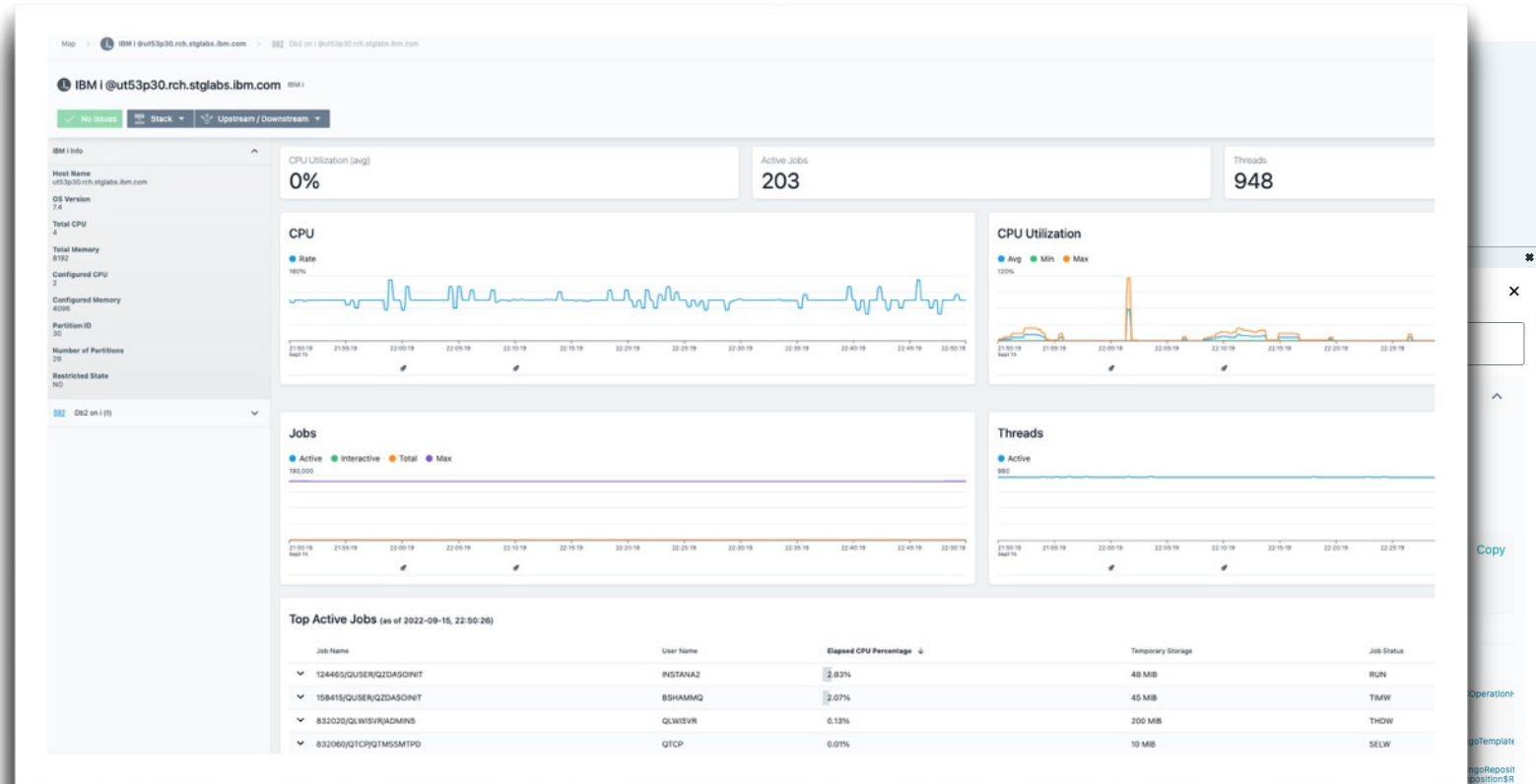
Network Interfaces Table:

Interface ↑	Mac	IPs	RX Bytes	RX Errors	TX Bytes	TX Errors
▼ en0	FA:46:6D:DE:63:20	192.168.165.46	148 B/s	0%	917 B/s	0%
▼ en3	FA:16:3E:89:34:2B	10.1.0.10	0 B/s	0%	0 B/s	0%
▼ sit0		0:0:0:0:0:c0a8:a52e	0 B/s	0%	0 B/s	0%

The screenshot shows a service impact alert in the Instana dashboard. The alert is titled 'SERVICE IMPACT' and has a yellow warning icon. The message reads: 'Sudden drop in the number of requests' with a duration of '2m 26s'. The affected service is 'catalogue-demo'. Below this, another alert is visible with the message: 'Erroneous call rate is too high' with a duration of '1m 26s', also affecting 'catalogue-demo'.

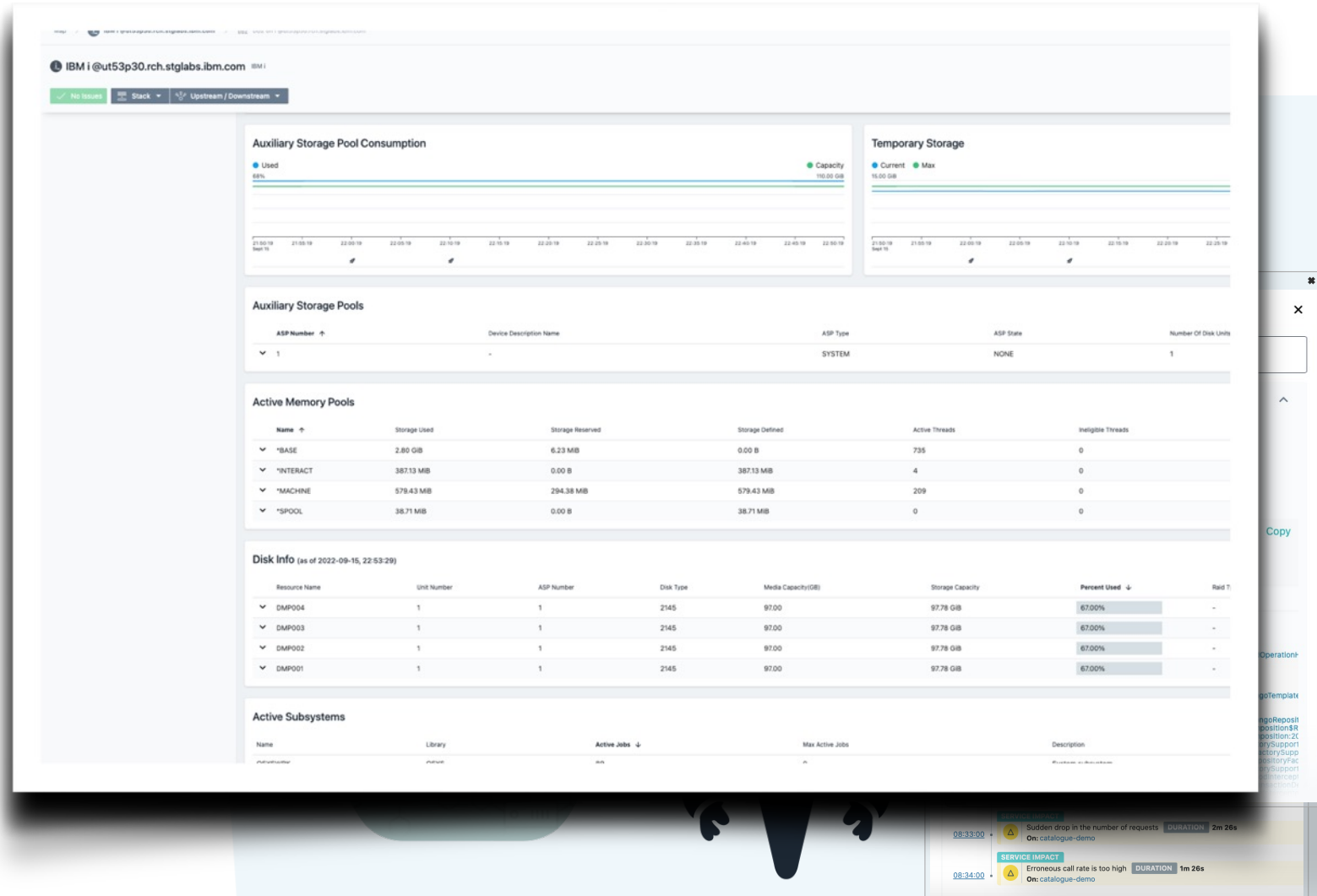
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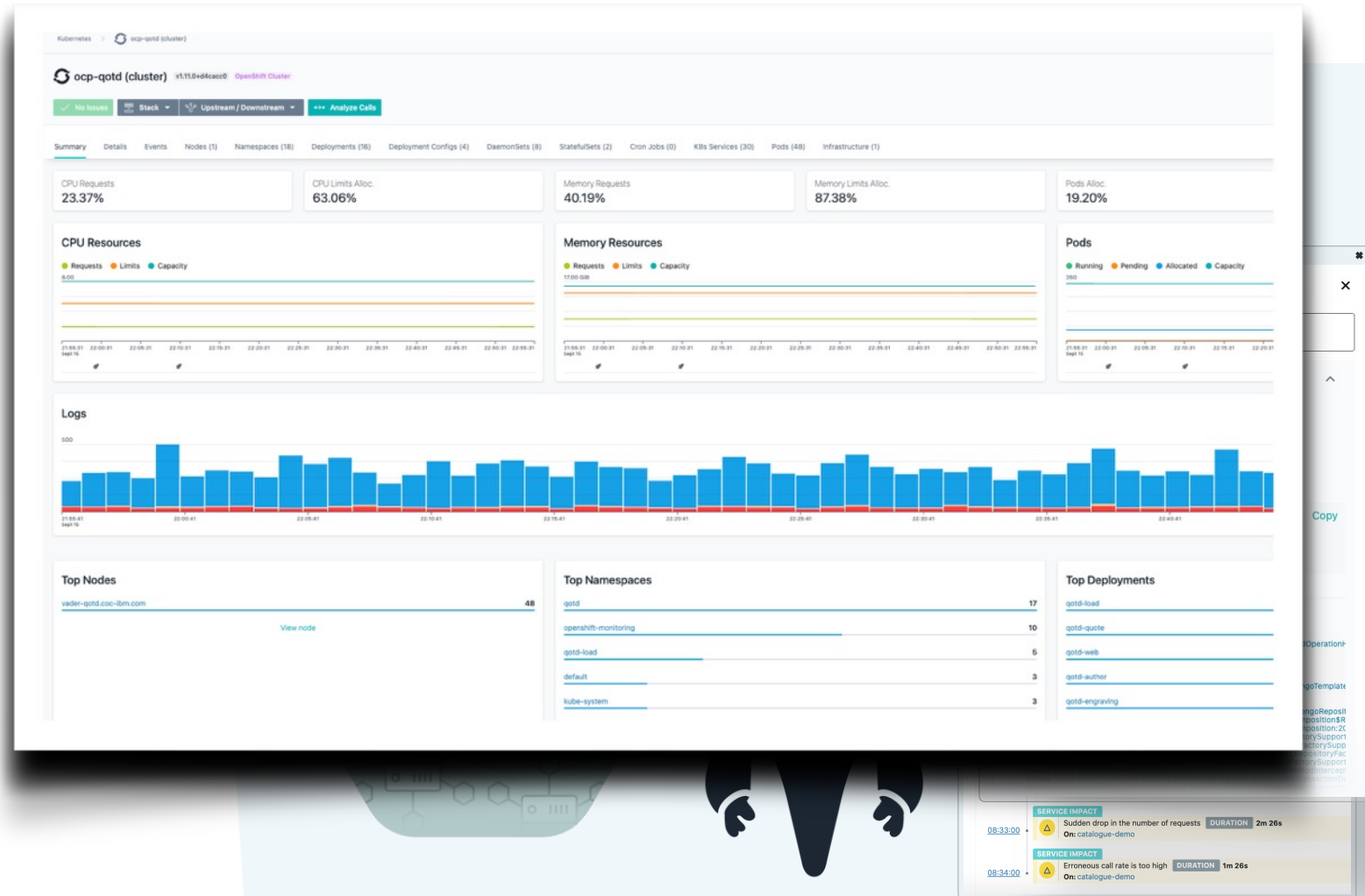
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Observability for IBM Power: OpenShift

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IBM