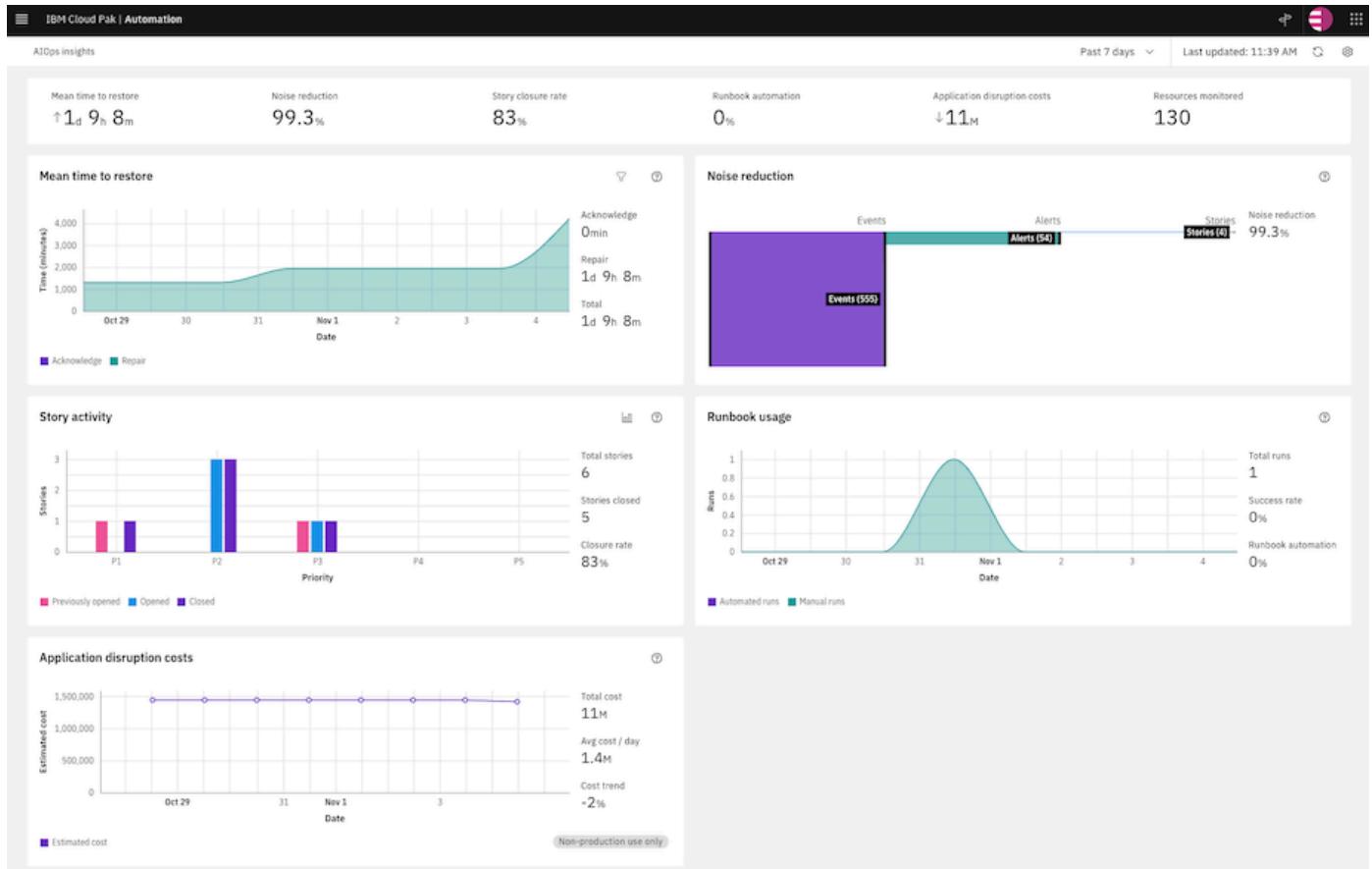


Cloud Pak for Watson AIOps

Sample Demo Script for the live demo environment



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1. Introduction

This script is intended as a guide to demonstrate Cloud Pak for Watson AIOps using the live demo environment, running the Cloud Pak itself and the demo application. The script is presented in a few sections. You can utilize some or all sections depending upon your client's needs.

The script is intended to be used with live Cloud Pak for Watson AIOps 3.x demo environment that you can reserve via [TechZone](#) or [install yourself](#).

In the demo script,

- “ **Action**” denotes a setup step for the presenter.
- “ **Narration**” denotes what the presenter will say.
- “ **Note**” denotes where the presenter may need to deviate from this demo script or add supplemental comments.

1.1 Key Terminology

You should be familiar with the following terminology when discussing Cloud Pak for Watson AIOps:

- **Application:** IBM Cloud Pak for Watson AIOps brings together the capability to group resources from different data types into applications. Clients can flexibly define an application to meet their business needs. With applications, you can obtain an integrated view of resources to understand inter-dependencies.
- **Event:** A point-in-time statement in Cloud Pak for Watson AIOps that tells us that something happened somewhere in a client's environment. It tells us what happened, where it happened, and when it happened. An event does not have to be exceptional or actionable, it can simply tell us something has happened.
- **Alert:** An alert in Cloud Pak for Watson AIOps represents an abnormal condition somewhere in an environment that requires resolution. It tells us what is happening, where it is happening, and when it started to happen. It may be informed by one or more events. It has a start time and end time.
- **Story:** A story in Cloud Pak for Watson AIOps represents an outage or reduction in service which is currently impacting customers and requires rapid remediation. It is created based on one or more trigger alerts that indicate the outage or reduction in service. Any alert of severity Major or Critical will act as a trigger alert. Other alerts that share the same cause may add context to the story.
- **Incident:** An incident in ServiceNow is an event of interruption disruption or degradation in normal service operation. An open incident in ServiceNow implies that the customer is impacted, or it represents the business risk.
- **Topology:** A topology is a representation of how constituent parts are interrelated. In Cloud Pak for Watson AIOps, an algorithm analyzes how the event nodes are proximate to each other and groups them into a topology-based correlation.

1.2 Get access to a live demo environment

To get a demo environment you have two possibilities:

1.2.1 Reserved Instances

To reserve a preconfigured demo environment, follow this link to TechZone to create a reservation and to request access credentials.

<https://techzone.ibm.com/collection/cp4waiopsdemo#tab-1>

! Due to the nature of the product, Cloud Pak for Watson AIOps demo environments can be used effectively by a single user at a time. Because of that, provided environments are intended for enablement and practicing rather than for actual client demo!

⚠ Please don't create your own applications in the shared demo environments or modify it in any shape or form. If you need to customize the demo install your own instance.

1.2.2 Install your own environment

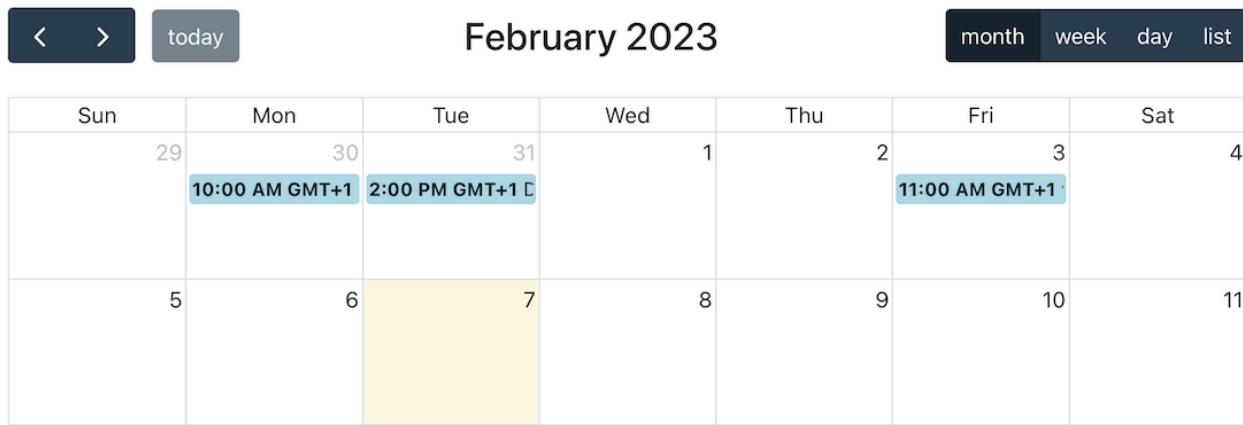
You can easily provision your own instance of the demo environment, as described in [Provisioning you own instance of CP4WAIOps demo](#).

This takes about 15 minutes of your time and 2-3 hours for the installation to complete in the background.

2. 🚀 Get started

2.1 Connect to the Demo UI

1. Click on your reservation



2. Click on [Open environment details](#)

Account partner ×

Reservation for nikh@ch.ibm.com

Date: January 30th

Time: 10:00 am - 11:00 am (local time)

Delete ReservationClose

[Open environment details →](#)

3. Click on **Open your demo environment**

The screenshot shows a dark-themed web interface titled "Arya's Environment Details". At the top left is a logo with the text "Build. Show. Share.". On the top right, it says "User: partner". Below the title, there are navigation links: "Home", "FAQ", and "What's New". A prominent blue button labeled "Open your Demo environment" with a copy icon is centered above a red box containing the text "Access Token: P4ssw0rd!". To the left of the main content area is a sidebar with a vertical list of categories: "Top", "Access Details", "Description", "Features", "Notes", and "Environment". The "Description" category is currently selected, indicated by an underline. Under "Description", there is a section titled "Access Details" with a URL: "URL: https://cp4waiops-demo-ui-cp4waiops-demo-ui.itzroks-270003bu3k-mo2syp-4b4a324f027aea19c5cbc0c3275c4656-0000.eugb.containers.appdomain.cloud/login?token=P4ssw0rd%21". Below this, another "Access Token" field shows "Access Token: P4ssw0rd!". Further down, there is a "Description" section with the text "Watson AIOps 3.6 stable demo environment" and a red callout box stating "UPDATED to 3.6 - with Instana and Event Manager".

2.2 Navigating The Demo UI

The Demo UI should open:

The screenshot shows the homepage of the IBM CloudPak for Watson AIOps Demo UI. At the top, there's a navigation bar with links for 'Demo', 'IBM AIOps', 'Third-Party', 'Scenarios', 'Configuration', and 'About'. Below the navigation bar, there's a main content area with two main sections: 'Access CP4WAIOPs' and 'Access Slack'. The 'Access CP4WAIOPs' section contains a button labeled 'CP4WAIOPs' with a red '1' badge above it, and a blue box below it containing user credentials: 'demo' and 'P4ssw0rd!'. The 'Access Slack' section contains a purple button labeled 'Slack' with a red '2' badge above it, and a dark purple box below it containing user credentials: 'ibmaiopsdemo@gmail.com' and 'P4ssw0rd!'. Below these sections, there's a heading 'Create Live Incidents Demo' with two sub-sections: 'Step1: Clear Incident' (with a green 'Clear Stories and Events' button and a red '2' badge above it) and 'Step2: Create Incident' (with a red 'Create Incident - Memory Leak' button and a red '3' badge above it). A note at the bottom says 'All other IBM AIOps Applications can be found [here](#)'.

The most important functionalities are:

1. **Open AIManager (login with the provided credentials)**
2. **Clear all existing Stories and Alerts**
3. **Create an Incident/Story**

i If you are asked to login to the Demo UI, please use the token/password **P4ssw0rd!**

⚠ Before start, you should open the AIManager and check that there are no open stories and alerts pending. If there are some created few hours before (leftovers from somebody else not completing the demo) you can clean them up using AIManager Demo UI as shown below.

2.3 Demonstration scenario

2.3.1 Overview

This use case shows clients how IBM Cloud Pak for Watson AIOps proactively helps avoid application downtimes and incidents impacting end-users. You play the role of an SRE/Operations person who has received a Slack message indicating that the RobotShop application is not displaying customer ratings. This is an important feature of the RobotShop application since RobotShop is the main platform from which the fictional company sells its robots.

2.3.2 Use Case

The use case demonstrates how Cloud Pak for Watson AIOps can assist the SRE/Operations team as they identify, verify, and ultimately correct the issue. The demonstration shows integration with Instana, Turbonomic, ServiceNow, and Slack. Slack is the ChatOps environment used for working on this incident.

You will demonstrate the following major selling points around Cloud Pak for Watson AIOps:

1. **Pulls data from various IT platforms:** IBM Cloud Pak for Watson AIOps monitors incoming data feeds including logs, metrics, alerts, topologies, and tickets, highlighting potential problems across incoming data, based on trained machine learning models.
2. **Utilizes AI and natural language processing:** An insight layer connects the dots between structured and unstructured data, using AI and natural language processing technologies. This allows you to quickly understand the nature of the incident.
3. **Provides trust and transparency:** Using accurate and trustworthy recommendations, you can move forward with the diagnosis of IT system problems and the identification and prioritization of the best resolution path.
4. **Resolves rapidly:** Time and money are saved from out-of-the-box productivity that enables automation and utilizes pre-trained models. A “similar issue feature” from past incidents allows you to get services back online for customers and end-users.

2.4 Demonstration flow

1. Scenario introduction
2. Trigger problem situation [In the background]
3. Verify the status of the Robot Shop application.
4. [Optional] Work with the ChatOps story. Explain the AI model for detecting log anomalies:
 1. View events
 2. View log anomalies
 3. Add findings to the story
 4. Update status by notifying users and adding notes
5. In Cloud Pak for Watson AIOps:
 1. View Story
 2. View Application resource topology
 3. View Events
 4. Explain correlation methods
6. [Optional] In ServiceNow:
 1. View similar incidents
 2. Create a new incident
 3. View the Watson AIOps Events associated with the Story
 4. Explore similar incidents from the past
7. [Optional] In Cloud Pak for Watson AIOps:
 1. Look at the integrations with other products:
 1. Github
 2. Metric Anomaly (Metric Manager in CP4AIOps)
 3. Turbonomic
 4. Instana
8. In Cloud Pak for Watson AIOps:
 1. Correct the issue with Runbook
 2. Update issue through Slack interface
 3. Verify Runbook execution and functionality of Robot Shop
9. Summary

3. Deliver the demo

3.1 Introduce the demo context

Narration

Welcome to this demonstration of the Cloud Pak for Watson AIOps platform. In this demo, I am going to show you how Watson AIOps can help your operations team proactively identify, diagnose, and resolve incidents across mission-critical workloads.

You'll see how:

- Watson AIOps intelligently correlates multiple disparate sources of information such as logs, metrics, events, tickets and topology
- All of this information is condensed and presented in actionable alerts instead of large quantities of unrelated alerts
- You can resolve a problem within seconds to minutes of being notified using Watson AIOps' automation capabilities

During the demonstration, we will be using the sample application called RobotShop, which serves as a proxy for any type of app. The application is built on a microservices architecture, and the services are running on Kubernetes cluster.

Action

Use demo introductory PowerPoint presentation, to illustrate the narration

Narration

Let's look at the environment that we have set up. Our sample application: "RobotShop" is running as a set of microservices in a Kubernetes cluster (slide 2). Typically, the Operations team maintaining such application has a collection of tools through which they collect various data types. Here we have Instana for metrics and tracing (slide 3), Prometheus to gather metrics and fire alerts and ElasticSearch to gather logs (slide 5). These can be replaced by any tools depending on the user environment.

All these data types like: traces, metrics, logs, events are brought into Watson AIOps. This industry-leading AIOps platform can detect anomalies in metrics and logs (slides 6-8) to proactively spot issues and is doing topology-based entity-linking (slides 9) to create a story (slides 10), to provide operators a detailed context to a problem.

Watson AIOps presents all of that to the user through ChatOps interface (Slack in this demo) or through a dedicated Web user interface (slides 11).

Note

We're using Slack in this demo, but Watson AIOps also integrates with Microsoft Teams, so depending on which tools are used in the organization, notifications will get delivered that way.

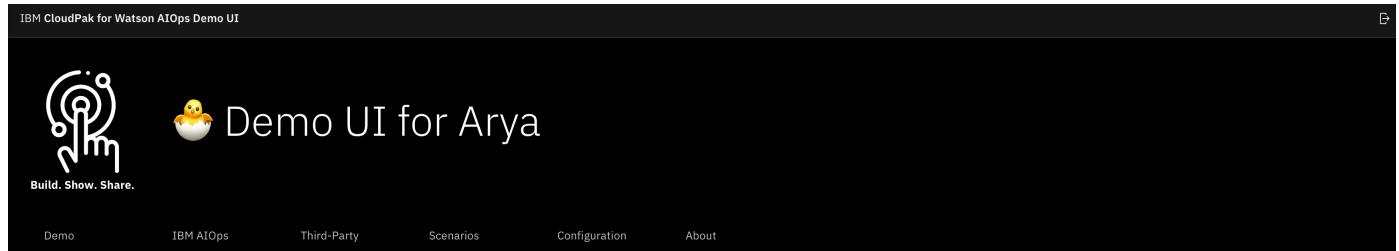
Narration

Finally, the Watson AIOps platform integrates Runbook automation to advise users on available fix procedures to the problem and let them automate execution (slides 12-13).

Note

The following step does not have to be shown to the client – you may perform the action in the background if possible.

3.2 Trigger the incident



This screenshot shows the "Create Live Incidents Demo" section. It's divided into two main steps: "Step1: Clear Incident" (with a red circle labeled "2" over the "Clear Stories and Events" button) and "Step2: Create Incident" (with a red circle labeled "3" over the "Create Incident - Memory Leak" button). Below each step is a corresponding status message: "Clear Stories and Events to reset" for Step 1 and "Create Incident simulating a Git Commit Failure" for Step 2.

The "Action" section starts with a rocket emoji and the heading "Action". It instructs the user to "Open AIManager Demo UI, and trigger the incident". Below this is a bulleted list: "Point your browser to the AIManager Demo UI," "Login with the token “P4ssw0rd!” and", and "Trigger the incident (3) you would like to use in your demo.". A note at the bottom states: "This action injects the stream of simulated events into the system, which replicates what could happen in a real life situation.".

3.3 Verify the status of the Robot Shop application

3.3.1 Show the Application

The screenshot shows a dark-themed user interface for managing third-party applications. At the top, there's a logo with a stylized robot head and the text "Build. Show. Share." Below the logo, a navigation bar includes links for Demo, IBM AIOps, Third-Party, Scenarios, Configuration, and About. The main content area displays three cards representing connected services:

- RobotShop**: Shows a purple status indicator.
- AWX**: Shows a purple status indicator and details for a user named "admin" with the ID "5esqrRr6AeGHpR6rUINqRBKI4ToImIhZ".
- Slack**: Shows a purple status indicator and details for a user named "ibmaiopsdemo@gmail.com" with the ID "P4ssw0rd!".

Action

Open the RobotShop application

The Link can be found in the **Demo UI** under **Third-Party**. Play with the application UI.

Narration

In this demo I am the application SRE (Site Reliability Engineer) responsible for an e-commerce website called RobotShop, an online store operated by my company. In the middle of the day (when clients make most of the purchases) I received a slack message on my mobile, alerting me that there is some problem with the site.

Let's verify what's going on with the RobotShop site. The application is up but displays an error that it cannot get any ratings.

3.3.2 Show ratings not working

The screenshot shows a dark-themed website for 'Stan's Robot Shop'. On the left is a sidebar with links for 'Login / Register', 'Cart' (empty), and a 'Categories' section listing various robot types. The main content area features a product card for 'Exceptional Medical Machine'. It includes an image of a blue and white robot, a rating section with a message 'Rating No votes yet. Vote now.' and five empty star icons, and a description: 'Fully automatic surgery droid with exceptional bedside manner'. At the bottom is a price of 'Price €1024.00' and a quantity selector set to '1'. A small 'Add to cart' button is visible. In the top right corner, there is a white and blue robot character named 'STAN'.

Action

Open any robot details to show that there are no ratings displayed.

Narration

I know that there are many ratings for each of the products that we sell, so when none are displayed, it means that there is a likely problem with **Ratings** service within application that may heavily impact client's purchasing decisions, as well as may be a sign of a wider outage.

3.4 Understanding and resolving the incident

3.4.1 Login to AI Manager

The screenshot shows the 'IBM CloudPak for Watson AIOps Demo UI' interface. At the top, there's a logo of a stylized antenna and the text 'Demo UI for Arya'. Below the logo, it says 'Build. Show. Share.' and shows a small chick icon. The navigation bar includes links for 'Demo', 'IBM AIOps', 'Third-Party', 'Scenarios', 'Configuration', and 'About'. The main content area has two sections: 'Access CP4WAIOPs' (with a red numbered 1) and 'Access Slack' (with a red numbered 2). Under 'Access CP4WAIOPs', there's a button labeled 'CP4WAIOPs →' and a blue box containing user credentials: 'demo' and 'P4ssw0rd!'. Below this, a note says 'All other IBM AIOps Applications can be found [here](#)'. Under 'Access Slack', there's a purple button labeled 'Slack' and a purple box containing the email 'ibmaiopsdemo@gmail.com' and password 'P4ssw0rd!'. The bottom section, titled 'Create Live Incidents Demo', has three steps: 'Step1: Clear Incident' (with a red numbered 2), 'Step2: Create Incident' (with a red numbered 3), and 'Action' (with a red numbered 4). Step 1 has a green button 'Clear Stories and Events' and a note 'Clear Stories and Events to reset environment if needed'. Step 2 has a red button 'Create Incident - Memory Leak' and a note 'Create Incident simulating a Git Commit to the Database'. The 'Action' section contains the text: 'In the Demo UI, click AI MANager (1). Result: The Watson AIOps web interface opens showing the welcome screen.'

IBM Cloud Pak | Automation

Welcome, demo!

Start connecting
Get started with a guided tour to see which connections to add first.
→

Manage users
Connect to your identity provider and specify who can access the platform.
→

Learn more
Explore documentation for the IBM Cloud Paks for Automation
🔗

Overview

Quick navigation

- AI model management
- AIOps insights
- Automations
- Data and tool connections
- Resource management
- Stories and alerts

Support

- IBM Cloud Pak for Watson AIOps
- Documentation
- Community
- IBM Support
- Share an idea

Getting Started

🎉 Welcome to the Arya Environment

🚀 Get started with the DemoUI
Token/Password: P4ssw0rd!

Created with CP4WAIOps-Deployer
Built with ❤️ by Niklaus Hirt

System Links

→ Flink Task Manager - Ingestion

IBM Automation - AIOps

→ Instana

User: admin@instana.local - Password: P4ssw0rd!

→ EventManager

User: smadmin - Password: KdSYKg3mVZlHlkw

Select your IBM AIOps Application above.

Demo Apps

→ RobotShop

→ LDAP

User: cn=admin,dc=ibm,dc=com - Password: P4ssw0rd!

→ Ansible Tower

User: admin - Password: SesqrRr6AeGHpR6rUINqRBkI4ToimIhZ

Select your app above.

Connection status

Total data and tool connections found
5

Defined applications

👉 Narration

Let's take a closer look at the incident that has been created in Watson AIOps.

3.4.2 Open the Story

The screenshot shows the IBM Cloud Pak | Automation interface. On the left, there's a navigation sidebar with sections like Home, Define, Operate, Stories and alerts (which is currently selected), and Administration. The main content area has a banner with the text "mo!" and a circular graphic of two people in a digital environment. Below the banner are several cards: "Getting Started" (Welcome to the Arya Environment, Get started with the DemoUI), "IBM Automation - AIOps" (Instana, EventManager, User: admin@instana.local, Password: P4ssw0rd!), "Demo Apps" (RobotShop, LDAP, User: cn=admin,dc=ibm,dc=com, Password: P4ssw0rd!), "System Links" (Flink Task Manager - Ingestion), and "Connection status" (5 defined applications). The "Stories and alerts" card is expanded, showing a single item: "Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory Limits".

Action

Click the "hamburger menu" on the upper left. Click **Stories and alerts** Result: Stories are displayed.

This screenshot shows the "Stories and alerts" section. It includes a search bar and a table with columns: Priority, Status, Description, Time open, User group, and Owner. There is one entry: "P1 Assigned Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory Limits" (Time open: 1 day, User group: All users, Owner: demo).

Priority	Status	Description	Time open	User group	Owner
P1	Assigned	Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory Limits	1 day	All users	demo

Narration

We can see that the simulation has created a **Story**. The **Story** includes grouped information related to the incident at hand. It equates to a classic War Room that are usually put in place in case of an outage.

The **Story** contains related log anomalies, topology, similar incidents, recommended actions based on past trouble tickets, relevant events, runbooks, and more.

3.4.3 Examining the Story

The screenshot shows the IBM Cloud Pak | Automation interface. On the left, there's a navigation sidebar with sections like Home, Define, Operate, Stories and alerts (which is currently selected), and Administration. The main content area has a large circular graphic with two people standing in the center, surrounded by icons representing various services. Below this are several cards:

- Getting Started**: Welcome to the Arya Environment, Get started with the DemoUI (Token/Password: P4ssw0rd!)
- IBM Automation - AIOps**: → Instana, User: admin@instana.local - Password: P4ssw0rd!
- Demo Apps**: → RobotShop, → LDAP, User: cn=admin,dc=ibm,dc=com - Password: P4ssw0rd!, → Ansible Tower, User: admin - Password: 5esqrRr6AeGhpR6rUINqRBk14ToimIhZ
- System Links**: → Flink Task Manager - Ingestion
- Connection status**: Total data and tool connections found 5
- Defined applications**: Shows a count of 5 defined applications.

Action

Click the "hamburger menu" on the upper left. Click **Stories and alerts** Result: Stories are displayed.

The screenshot shows the 'Stories and alerts' section of the interface. It includes a search bar and a table with columns: Priority, Status, Description, Time open, User group, and Owner. One row is visible in the table:

Priority	Status	Description	Time open	User group	Owner
P1	Assigned	Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory Limits	1 day	All users	demo

Narration

Now let's have a look at the **Story**.

IBM Cloud Pak | Automation

Stories / Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New

5 Change story settings

Overview Alerts Topology StoryID#3k6q-nsh Assigned Priority 1

Probable cause alerts 1 Runbooks MySQL - available replicas is less than desired replicas - Check conditions and error events

Runbooks MySQL - change detected - The value **resources/limits** has changed

Runbooks Latency is Higher than expected. Actual: 1050.4840 Expected: 1.5537

Recommended runbooks 3

Filter for recommended runbooks associated with this story.

Runbooks for selected alerts 1 Mitigate RobotShop Problem

Status Ready to run Type Automated

Success rate 100% Policy DEMO RobotShop Mitigation

Avg. rating ★★★★☆

Topology diagram showing resources: ratings, mysql, mysql-86...-6-jw6c5, worker-1...177.175, and robotshop-latest. A red speech bubble labeled 2 points to the mysql node. A red speech bubble labeled 4 points to the "Similar past resolution tickets" section.

Similar past resolution tickets 4

Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory Limits

Based on similarity from query and incidents

MySQL memory peak usage anomaly

Based on similarity from query and incidents

As I said before, the Story regroups all relevant information concerning the incident at hand that have been identified by Watson AIOps.

1. A list of Alerts that have been identified by Watson AIOps to be the most probable cause
2. The localization of the problem related to the Topology
3. The suggested Runbooks to automatically mitigate the incident
4. Similar Incidents that resemble the incident at hand
5. Status of the Story - here I can change the status and priority of the story

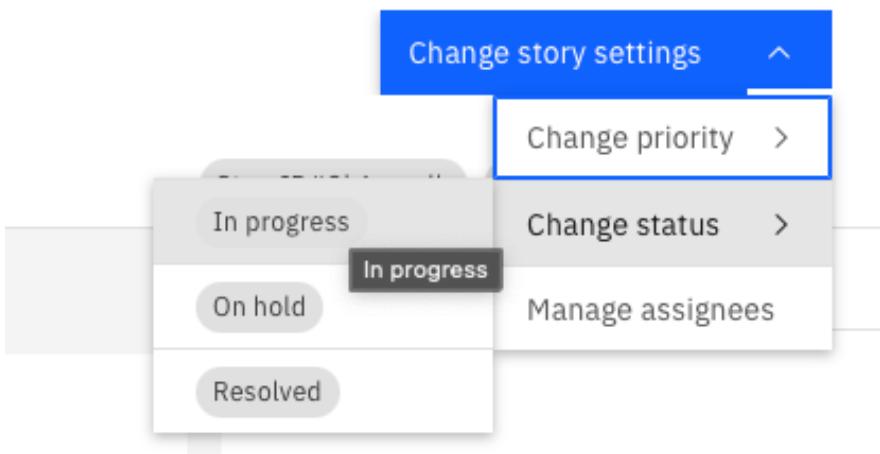
3.4.4 Acknowledge the Story

🚀 Action

Click on **Change Story Settings**.

Select **Change Status**.

Click on **In progress**



👉 Narration

First and before I continue examining the Story I want to let my colleagues know that I'm working on the incident. So let me set it to In Progress.

3.4.5 Similar Incidents

Action

Click the first similar resolution ticket *Result: A ServiceNow Ticket is displayed.*

The screenshot shows a ServiceNow incident detail page for ticket INC0099223. The ticket is categorized as Software, Impact 1 - High, Priority 1 - Critical, and assigned to Niklaus Hirt. The description notes a ratings outage after a GIT Commit, with a note from Predictive Insights about MySQL memory peak usage. Below the main ticket details, there's a 'Work notes' section containing a note from DEV about a massive reduction in resource limits and a warning to check with DEV to adapt the GIT Commit. There are tabs for 'Notes', 'Related Records', and 'Resolution Information'.

Narration

Most large organizations use IT Service Management tools to govern processes around IT. Our organization is using ServiceNow for that purpose. Past incidents with resolution information are ingested and analysed by Watson AIOps.

The IBM Cloud Pak for Watson AIOps trains on existing tickets and it extracts the steps used to fix previous incidents (if documented) and recommend resolutions using natural language processing. This AI model helps you discover historical incidents to aid in the remediation of current problems.

So for the **Story**, your team is presented with the top-ranked similar incidents from the past. These relevant similar incidents help speed up incident resolution even if the I don't have access to ServiceNow. Without these features, your team must manually search for past incidents and resolutions, which is time-consuming.

In this particular example I can see that the problem was related to a GIT Commit that massively reduced the resource limits has been committed by DEV on the mysql Deployment.

Let me check how the problem was resolved for this incident.

Note

IMPORTANT: In the Robot Shop demo scenario, the integration with ServiceNow is simulated with the static content.

Resolution Information



Click on the Resolution Information Tab

Incident INC0099223

Number: INC0099223

Caller: Carol Coughlin

Category: Software

Subcategory: -- None --

Service: RobotShop

Service offering:

Configuration item: RobotShop

* Short description: Ratings outage after GIT Commit

Description: Ratings are not displayed anymore after a GIT Commit by DEV.
Predictive Insights indicates an anomaly with MySQL memory peak usage.
Could be memory leak or a code change in the GIT Commit?

Contact type: -- None --

State: Closed

Impact: 1 - High

Urgency: 1 - High

Priority: 1 - Critical

Assignment group: Software

Assigned to: Niklaus Hirt

Related Search Results >

Notes Related Records Resolution Information

Knowledge:

Resolved by: System Administrator

Resolved: 2021-05-22 04:24:38

Resolution code: Solved (Work Around)

Resolution notes:

! Cause: GIT Commit set the MySQL Deployment limits too low
- MySQL Pod is restarting/killed with OutOfMemory status.
- Ratings Pod is unable to access database.
- After correction, ratings Pod is unable to pick up the restart and has to be restarted as well.

Resolved by adapting mysql deployment resource limits and restarting ratings pods.

Runbook:
Increase resource limits for mysql Deployment - check with DEV to correct GIT Commit
oc delete pod -n robot-shop \$(oc get po -n robot-shop | grep ratings | awk '{print \$1}')

Update Resolve Delete

Related Links

Show SLA Timeline

Repair SLAs



Narration

It seems that it was resolved by changing the mysql deployment and a Runbook had been created to mitigate the problem.

To finish up, I will check if the incident was related to an official change.

Examine the Change

Incident INC009223

Number: INC009223

Caller: Carol Coughlin

Category: Software

Subcategory: -- None --

Service: RobotShop

Service offering:

Configuration item: RobotShop

Short description: Ratings outage after GIT Commit

Description: Ratings are not displayed anymore after a GIT Commit by DEV.
Predictive Insights indicates an anomaly with MySQL memory peak usage.
Could be memory leak or a code change in the GIT Commit?

Contact type: -- None --

State: Closed

Impact: 1 - High

Urgency: 1 - High

Priority: 1 - Critical

Assignment group: Software

Assigned to: Niklaus Hirt

Related Search Results >

Notes Related Records Resolution Information

Parent Incident: [Search]

Change Request: [Search]

Problem: [Search]

Caused by Change: CHG0030991 [Info] (Red Box)

Update Resolve Delete



Click on the **Related Records** Tab

Click on the **i** Button next to **Caused by Change**

Change Request CHG0030991

New Assess Authorize Scheduled Implement Review Closed Canceled

Number: CHG0030991

Requested by: Abel Tuter

Category: Applications Software

Service: RobotShop

Service offering:

Configuration item:

Priority: 2 - High

Risk: Moderate

Impact: 2 - Medium

Short description: Reduce Footprint for MySQL Service in RobotShop Backend

Description: Reduce Footprint for MySQL Service in RobotShop Backend - <https://github.com/piroscom/robot-shop>

Type: Normal

State: Implement

Conflict status: Not Run

Conflict last run:

Assignment group: Software

Assigned to: Demo User

Planning Schedule Conflicts Notes Closure Information

Justification: Overall Application Memory Footprint is too big

Implementation plan: Modify YAML

Risk and impact analysis: Should be minimal

Narration

Ok, so now I can see that the problem is related to a Change that aims to reduce the footprint of the mysql database.

As it's still ongoing, chances are high, that the development team recreated a similar problem.

Obviously, in real life I would now start the Runbook to see if it resolves the problem.

But for the sake of the demo, let's dig a little deeper first.

3.4.6 Examine the Alerts

Action

Close the ServiceNow page and click the **Alerts** Tab. *Result: The list of Alerts is displayed.*

Sev	Business criticality	State	Ranking	Summary	Type	Sender	Resource	First occur
🔴	Platinum +4	Open	1	MySQL - available replicas is less than desired replicas - Check conditions and error eve...	Instana Availability	Instana	mysql	2023-02-0
⚠️	Platinum +4	Open	1	MySQL - change detected - The value **resources/limits** has changed	Instana Change	Instana	mysql	2023-02-0
⚠️	Platinum +4	Open	1	Latency is Higher than expected. Actual: 1050.4840 Expected: 1.5537	ANOMALY:Latency:L...	metric-anomaly-detection	mysql-predictive	2023-02-0
ℹ️	Platinum +4	Open	1	Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory ...	Github Commit	GitHub	mysql	2023-02-0
ℹ️	Platinum +4	Open	1	Resize DOWN VCPU Limit from 500m to 256m in Container Spec mysql	Deployment - RESIZE	Turbonomic	mysql-turbonomic	2023-02-0
⚠️	Platinum +4	Open	2	Resize UP VMem Limit from 50Mi to 328Mi in Container Spec mysql	Deployment - RESIZE	Turbonomic	mysql	2023-02-0
⚠️	Platinum +4	Clear	3	Abnormal behavior in the logs for component: ratings. Evidence includes: patterns + em...	Natural language an...	Log Anomaly	ratings	2023-02-0
⚠️	Platinum +4	Open	3	Erroneous call rate is too high - ratings	Instana Performance	Instana	ratings-predictive	2023-02-0
⚠️	Platinum +4	Open	3	Latency is Higher than expected. Actual: 2.4800 Expected: 1.5688	ANOMALY:Latency:L...	metric-anomaly-detection	ratings-predictive	2023-02-0
⚠️	Platinum +4	Open	4	MySQL K8s Pod Created	Security Change	Falco	mysql	2023-02-0
ℹ️	Platinum +2	Open	4	Scale Volume vol-01769a4adf79dd433 from GP2 to STANDARD in 582147391765	VirtualVolume - SCA...	Turbonomic	catalogue-db	2023-02-0
⚠️	Platinum +4	Open	5	TransactionsPerSecond is Lower than expected. Actual: 0.4840 Expected: 152.1102	ANOMALY:Transacti...	metric-anomaly-detection	mysql-predictive	2023-02-0
⚠️	Platinum +4	Open	6	Ratings - Error: unable to contact MYSQL failed with status code 500	Log Event	ELK	ratings-deployment	2023-02-0
🔴	Platinum +4	Open	7	Robotshop Homepage call rate is too high- Robotshop call rate stays at a high level for a...	Instana Performance	Instana	web	2023-02-0
⚠️	Platinum +4	Open	8	Catalogue - Error: unable to contact http://ratings:9080/ratings got status of 503	Log Event	ELK	catalogue	2023-02-0
⚠️	Platinum +4	Open	9	Robotshop Homepage - Functional verification failed	Functional Test	robot-shop	web	2023-02-0

Narration

Notice, that alerts are not sorted by severity, but the AI engine ranked them by relevance. The ones that are likely related to the root cause are at the top. Let's look at the first row for some more details.

Action

Click on the first Alert in the list. *Result: The Alert details pane is displayed.*

Narration

In the **Alert details**, you can see different types of groupings explaining why the specific alert was added to the story.

Scope based grouping



Click **Scope-based grouping**. Result: An explanation is displayed.

The screenshot shows a list of grouping methods under 'Alert details': Information, Runbook, Topology, Temporal correlation, and Scope-based grouping. The 'Scope-based grouping' item is highlighted with a blue border. Below it, a text box explains that alerts share a cause if they occurred within the same scope and period of time, defining properties for grouping. A dropdown menu at the bottom is set to 'Topological grouping'.



Some alerts were added to the story because they occurred on the same resource within a short period (default is 15 minutes)

Topological grouping



Click **Topological grouping**. Result: The topological grouping is displayed.

The screenshot shows a list of grouping methods under 'Alert details': Information, Runbook, Topology, Temporal correlation, Scope-based grouping, and Topological grouping. The 'Topological grouping' item is highlighted with a blue border. Below it, a 'Resource group name' field is set to 'robot-shop'. The main area displays a complex network graph with numerous nodes connected by lines, representing the topology of the resources. A legend indicates that red nodes represent 'Application' resources.



Other alerts were grouped because they occurred on the logically or physically related resources. This correlation is using the application topology service that stitches topology information from different sources.

Temporal grouping

Action

Click **Temporal correlation**. Result: Temporal correlation is displayed.

The screenshot shows the 'Alert details' window with several tabs at the top: 'Information', 'Runbook', 'Topology', and 'Temporal correlation'. The 'Temporal correlation' tab is highlighted with a blue border. Below the tabs, there is a table with the following data:

First group instance	Sep 12, 2022 02:23:09 PM
Total group instances	3
Average instance duration	1 hour
Mon	<input checked="" type="checkbox"/>
Wed	<input type="checkbox"/>
Fri	<input checked="" type="checkbox"/>
Scope-based grouping	<input type="checkbox"/>
Topological grouping	<input type="checkbox"/>

Narration

Finally, the temporal correlation adds to the story events that previously, in history, are known to occur close to each other in the short time window. What is most important here is the fact that all these correlations happen automatically – there is no need to define any rules or program anything. In highly dynamic and distributed cloud-native applications this is a huge advantage that saves a lot of time and effort.

Action

Close the Alert details window.

3.4.7 Understand the Incident

Action

Click twice on the **Last occurrence** Header.

Result: The "Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml" should be at the bottom

The screenshot shows the IBM Cloud Pak | Automation interface with the 'Alerts' tab selected. The page title is 'Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory ...'. The table has columns: State, Ranking, Summary, Type, Sender, Resource, First occurrence, and Last occ. The last event listed is a GitHub Commit, which is the target of the action described in the section.

State	Ranking	Summary	Type	Sender	Resource	First occurrence	Last occ
Open	5	TransactionsPerSecond is Lower than expected. Actual: 0.4840 Expected: 152.1102	ANOMALY:Transacti...	metric-anomaly-detection	mysql-predictive	2023-02-06T12:05:00.000Z	2023-0
Open	3	Latency is Higher than expected. Actual: 2.4800 Expected: 1.5688	ANOMALY:Latency:L...	metric-anomaly-detection	ratings-predictive	2023-02-06T12:05:00.000Z	2023-0
Open	1	Latency is Higher than expected. Actual: 1050.4840 Expected: 1.5537	ANOMALY:Latency:L...	metric-anomaly-detection	mysql-predictive	2023-02-06T12:00:00.000Z	2023-0
Clear	3	Abnormal behavior in the logs for component: ratings. Evidence includes: patterns + em...	Natural language an...	Log Anomaly	ratings	2023-02-06T11:50:50.000Z	2023-0
Open	4	Scale Volume vol-01769a4adf79dd433 from GP2 to STANDARD in 582147391765	VirtualVolume - SCA...	Turbonomic	catalogue-db	2023-02-06T11:39:53.000Z	2023-0
Open	1	Resize DOWN VCPU Limit from 500m to 256m in Container Spec mysql	Deployment - RESIZE	Turbonomic	mysql-turbonomic	2023-02-06T11:39:43.000Z	2023-0
Open	7	Robotshop Homepage call rate is too high- Robotshop call rate stays at a high level for a...	Instana Performance	Instana	web	2023-02-06T11:39:33.000Z	2023-0
Open	1	MySQL - available replicas is less than desired replicas - Check conditions and error eve...	Instana Availability	Instana	mysql	2023-02-06T11:39:23.000Z	2023-0
Open	3	Erroneous call rate is too high - ratings	Instana Performance	Instana	ratings-predictive	2023-02-06T11:39:13.000Z	2023-0
Open	2	Resize UP VMem Limit from 50Mi to 328Mi in Container Spec mysql	Deployment - RESIZE	Turbonomic	mysql	2023-02-06T11:38:13.000Z	2023-0
Open	8	Catalogue - Error: unable to contact http://ratings:9080/ratings got status of 503	Log Event	ELK	catalogue	2023-02-06T11:38:03.000Z	2023-0
Open	6	Ratings - Error: unable to contact MYSQL failed with status code 500	Log Event	ELK	ratings-deployment	2023-02-06T11:37:53.000Z	2023-0
Open	9	Robotshop Homepage - Functional verification failed	Functional Test	robot-shop	web	2023-02-06T11:37:43.000Z	2023-0
Open	4	MySQL K8s Pod Created	Security Change	Falco	mysql	2023-02-06T11:37:33.000Z	2023-0
Open	1	MySQL - change detected - The value **resources/limits** has changed	Instana Change	Instana	mysql	2023-02-06T11:37:23.000Z	2023-0
Open	1	Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory ...	GitHub Commit	GitHub	mysql	2023-02-06T11:36:33.000Z	2023-0

Narration

When trying to understand what happened during the incident, I sort the Alerts by occurrence. This allows you to understand the chain of events.

- I can see that the first event was a code change that had been committed to **GitHub**. When I hover over the description I get the full text.
So it seems that the Development Team has reduced the available memory for the mysql database.

Other events are confirming the hypothesis.

- I can then see the CI/CD process kick in and deploys the code change to the system detected by the Security tool and
- Instana** has detected the memory size change.
- Then **Functional Selenium Tests** start failing and
- Turbonomic** tries to scale-up the mysql database.
- Instana** tells me that the mysql Pod is not running anymore, the replicas are not matching the desired state.

- Cloud Pak for Watson AIOps has learned the normal, good patterns for logs coming from the applications. The Story contains a **Log Anomaly** that has been detected in the ratings service that cannot access the mysql database.

Sev	Business criticality	State	Ranking	Summary	Type
⚠️	+5	Open	5	TransactionsPerSecond is Lower than expected. Actual: 0.4840 Expected: 152.1102	ANOMALY:Transact...
⚠️	Platinum +4	Open	3	Latency is Higher than expected. Actual: 2.4800 Expected: 1.5688	ANOMALY:Latency:L...
⚠️	Platinum +4	Open	1	Latency is Higher than expected. Actual: 1050.4840 Expected: 1.5537	ANOMALY:Latency:L...
⚠️	Platinum +4	Clear	3	Abnormal behavior in the logs for component: ratings. Evidence includes: patterns + em...	Natural language an...
ℹ️	Platinum +2	Open	4	Scale Volume vol-01769a4adf79dd433 from GP2 to STANDARD in 582147391765	VirtualVolume - SCA...
ℹ️	Platinum +4	Open	1	Resize DOWN VCPU Limit from 500m to 256m in Container Spec mysql	Deployment - RESIZE
🔴	Platinum +4	Open	7	Robotshop Homepage call rate is too high - Robotshop call rate stays at a high level for a...	Instana Performance
🔴	Platinum +4	Open	1	MySQL - available replicas is less than desired replicas - Check conditions and error eve...	Instana Availability
⚠️	Platinum +4	Open	3	Erroneous call rate is too high - ratings	Instana Performance
⚠️	Platinum +4	Open	2	Resize UP VMem Limit from 50Mi to 328Mi in Container Spec mysql	Deployment - RESIZE
⚠️	Platinum +4	Open	8	Catalogue - Error: unable to contact http://ratings:9080/ratings got status of 503	Log Event
⚠️	Platinum +4	Open	6	Ratings - Error: unable to contact MYSQL failed with status code 500	Log Event
⚠️	Platinum +4	Open	9	Robotshop Homepage - Functional verification failed	Functional Test
⚠️	Platinum +4	Open	4	MySQL K8s Pod Created	Security Change
⚠️	Platinum +4	Open	1	MySQL - change detected - The value **resources/limits** has changed	Instana Change
ℹ️	Platinum +4	Open	1	Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory ...	Github Commit

Action

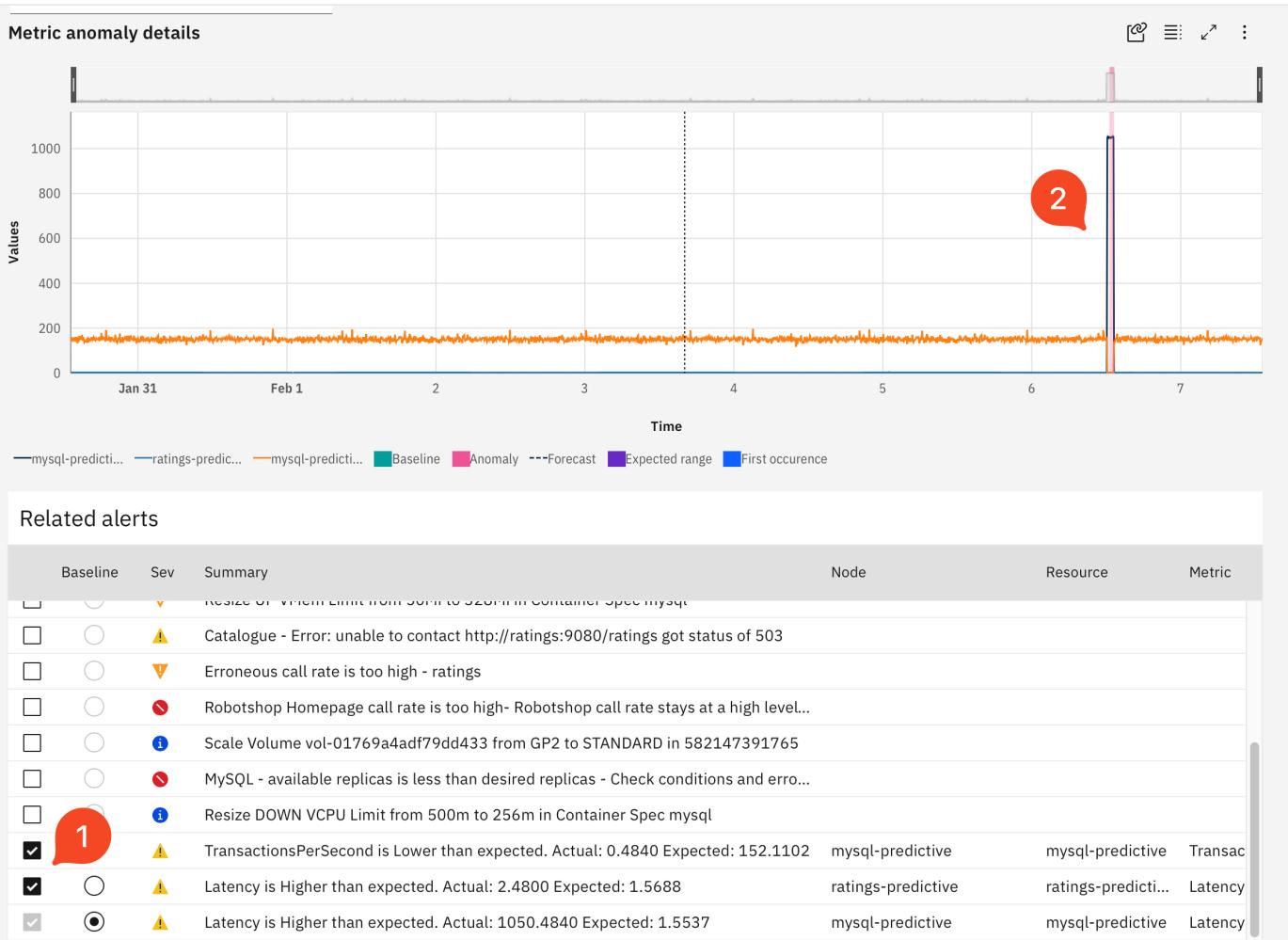
Click on a Alert line that has **ANOMALY:** in the Type column. Then open the **Metric Anomaly Details** accordion.

Narration

- Cloud Pak for Watson AIOps is also capable of collecting metrics from multiple sources and detecting **Metric Anomalies**. It was trained on hundreds or thousands of metrics from the environment and constructs a dynamic baseline (shown in green). The graphic suddenly turns red which relates to detected anomaly when the database is consuming a higher amount of memory than usual.

Metric anomaly details

x



Action

(1) In **Related Alerts** select some additional alerts.

Narration

You can display several alerts at the same time to better understand the temporal dependencies

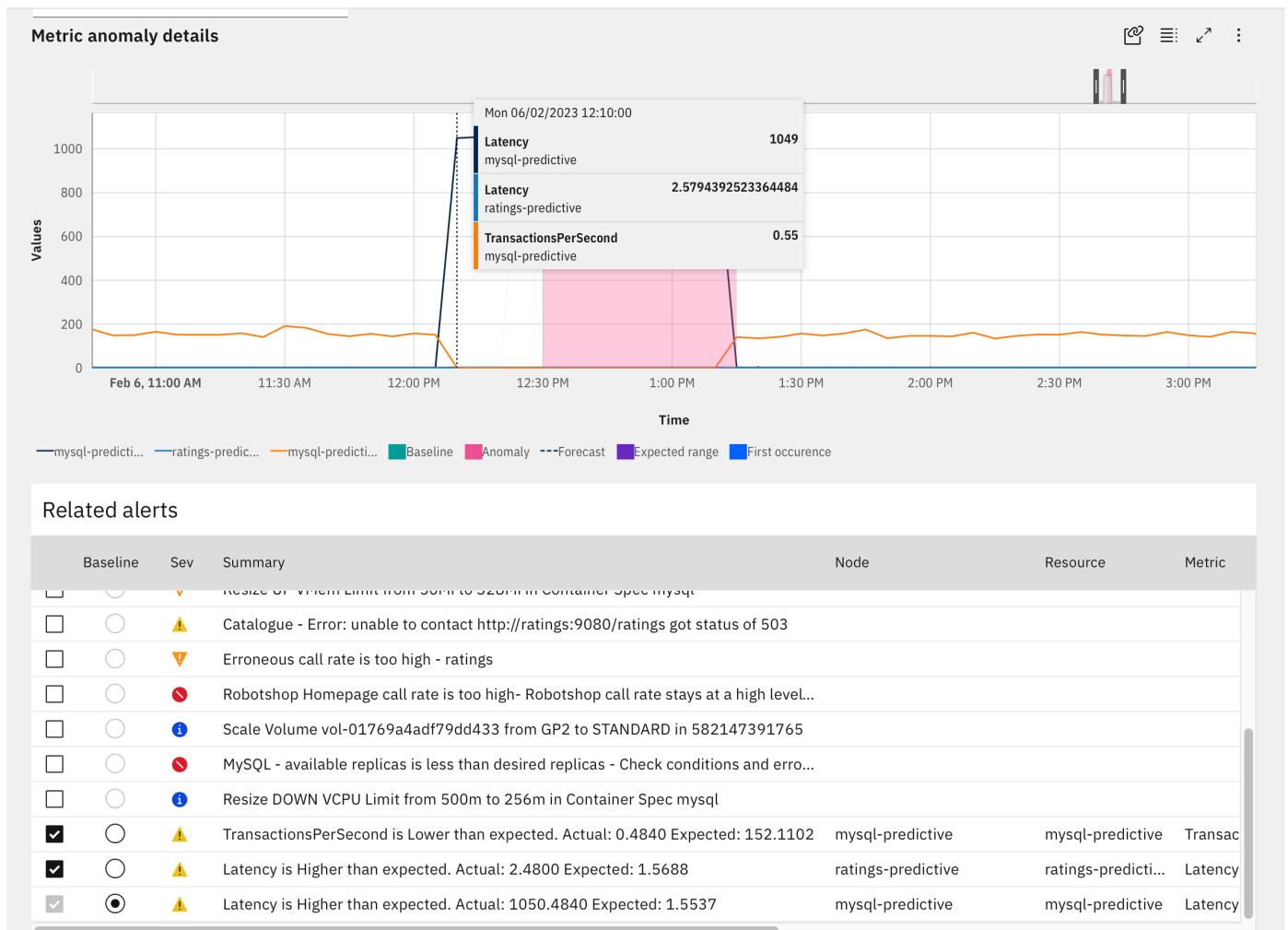
Action

(2) Select a portion of the graph with your mouse to zoom in

Narration

Now let's zoom in to better see the anomalies

Metric anomaly details



Action

Hover over a datapoint to show the before/after values.

Narration

I can clearly see that the incident caused the **Latencies** to skyrocket and the **Transactions per Seconds** are almost zero. This is yet another confirmation of the source of the problem.

Action

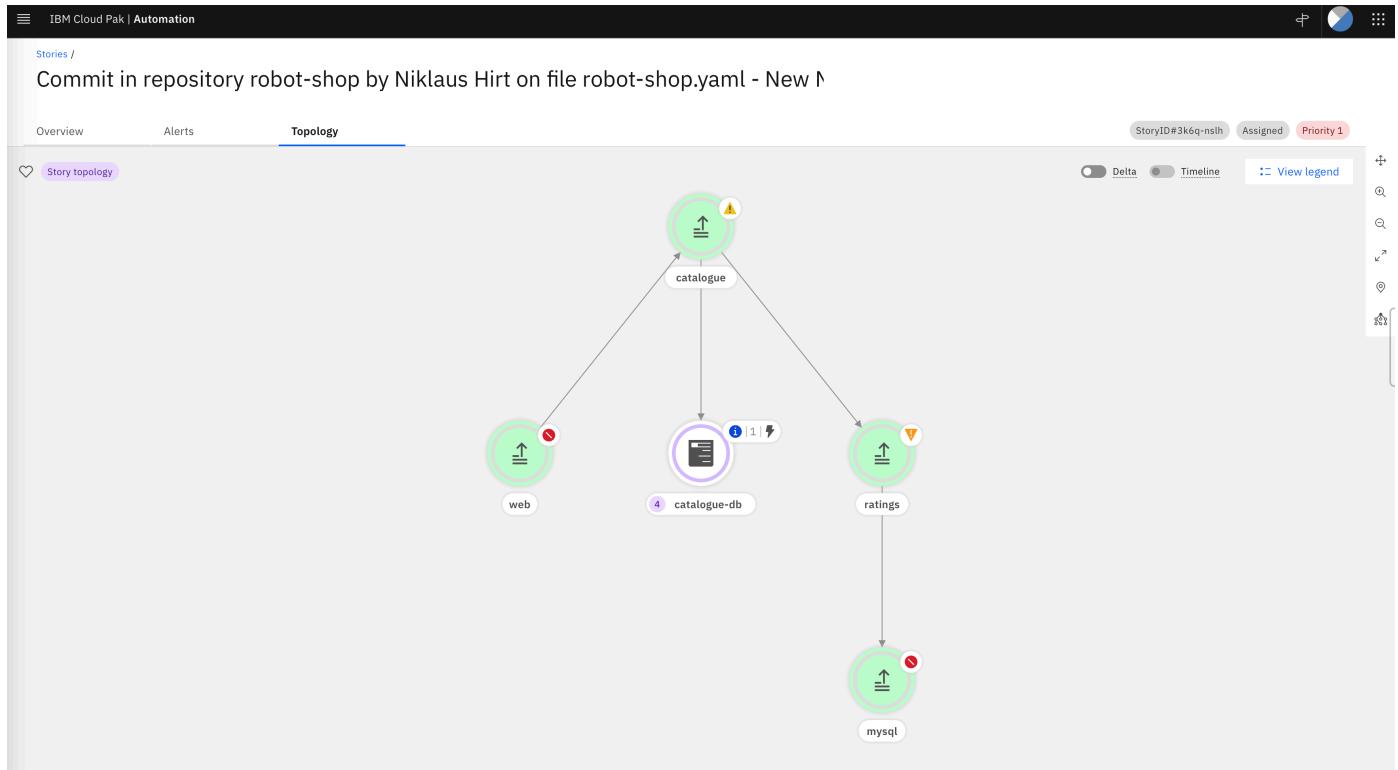
Close the Metric anomaly details view.

3.4.8 Examining the Topology

Action

Click the **Topology** Tab.

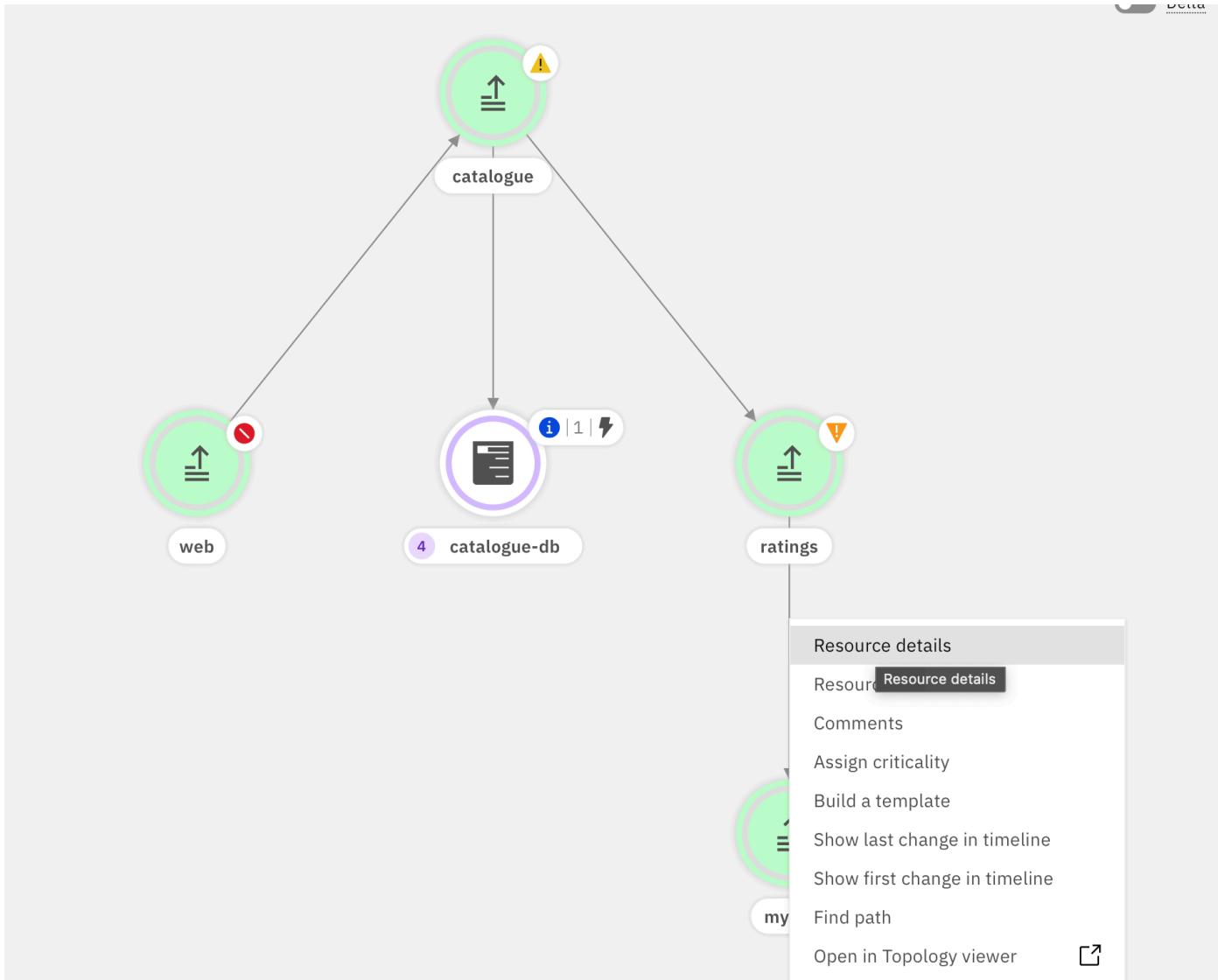
Result: The topology is displayed.



Narration

The interface shows the **topology** of the application that is relevant to the incident. IBM Cloud Pak for Watson AIOps' topology service delivers a working understanding of the resources that you have in your environment, how the resources relate to each other, and how the environment has changed over time.

You can see that there are some statuses attached to the different resources, marked with colorful dots. Let's view the details and status of the **mysql** resource with red status.



Action

Find the resource which displays resource name “**mysql**”. Then, right-click and select **Resource details**.

Result: Detailed view displays.

Action

Click on Tab **Alerts**

Result: Detailed view of the Alerts specific for this resource.

Resource details

mysql 

Platinum

Properties **Alerts** Data origin Related applications Related resource groups

Historical time point: 07/02/2023, 20:52:55

Show active only 

Summary	Severity	Last change
TransactionsPerSecond is Lower than expected. Actual: 0.4840 Expected: 152.1102	 Minor	06/02/2023, 13:10:00
Latency is Higher than expected. Actual: 1050.4840 Expected: 1.5537	 Minor	06/02/2023, 13:10:00
Resize DOWN VCPU Limit from 500m to 256m in Container Spec mysql	 Information	06/02/2023, 12:39:52
MySQL - available replicas is less than desired replicas - Check conditions and error events	 Critical	06/02/2023, 12:39:32
Resize UP VMem Limit from 50Mi to 328Mi in Container Spec mysql	 Major	06/02/2023, 12:39:12
MySQL K8s Pod Created	 Minor	06/02/2023, 12:37:42
MySQL - change detected - The value **resources/limits** has changed	 Minor	06/02/2023, 12:37:32
Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New Memory Limits	 Warning	06/02/2023, 12:37:22

Narration

The topology service provides operations teams with complete up-to-date visibility over dynamic infrastructure, resources, and services. The topology service lets you query a specific resource for details, and other relevant information. Here I can see all Alerts for the mysql database resource for example.

3.4.9 [Optional] Topology in-depth

Resource details

Resource alerts

Comments

Assign criticality

Build a template

Show last change in timeline

Show first change in timeline

Find path

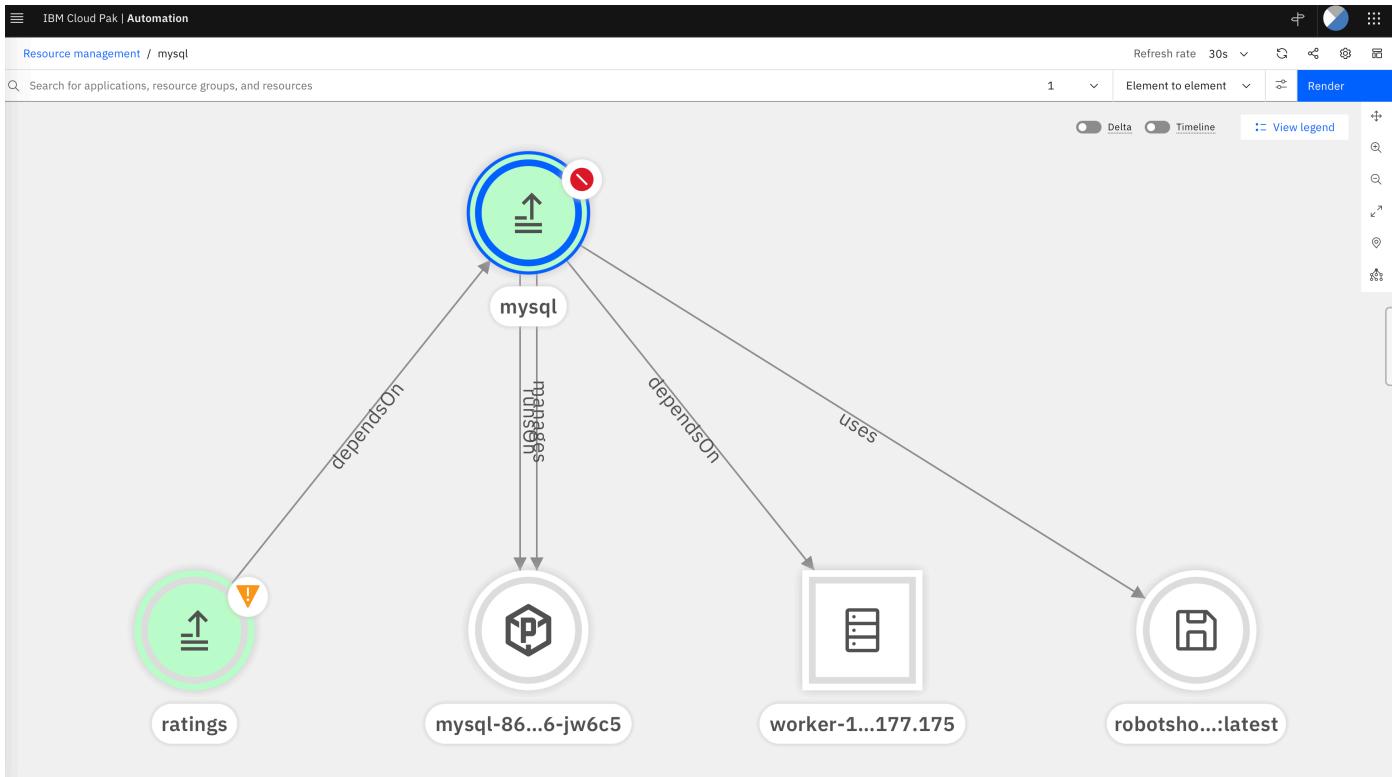
mysql

Open in Topology viewer

 Action

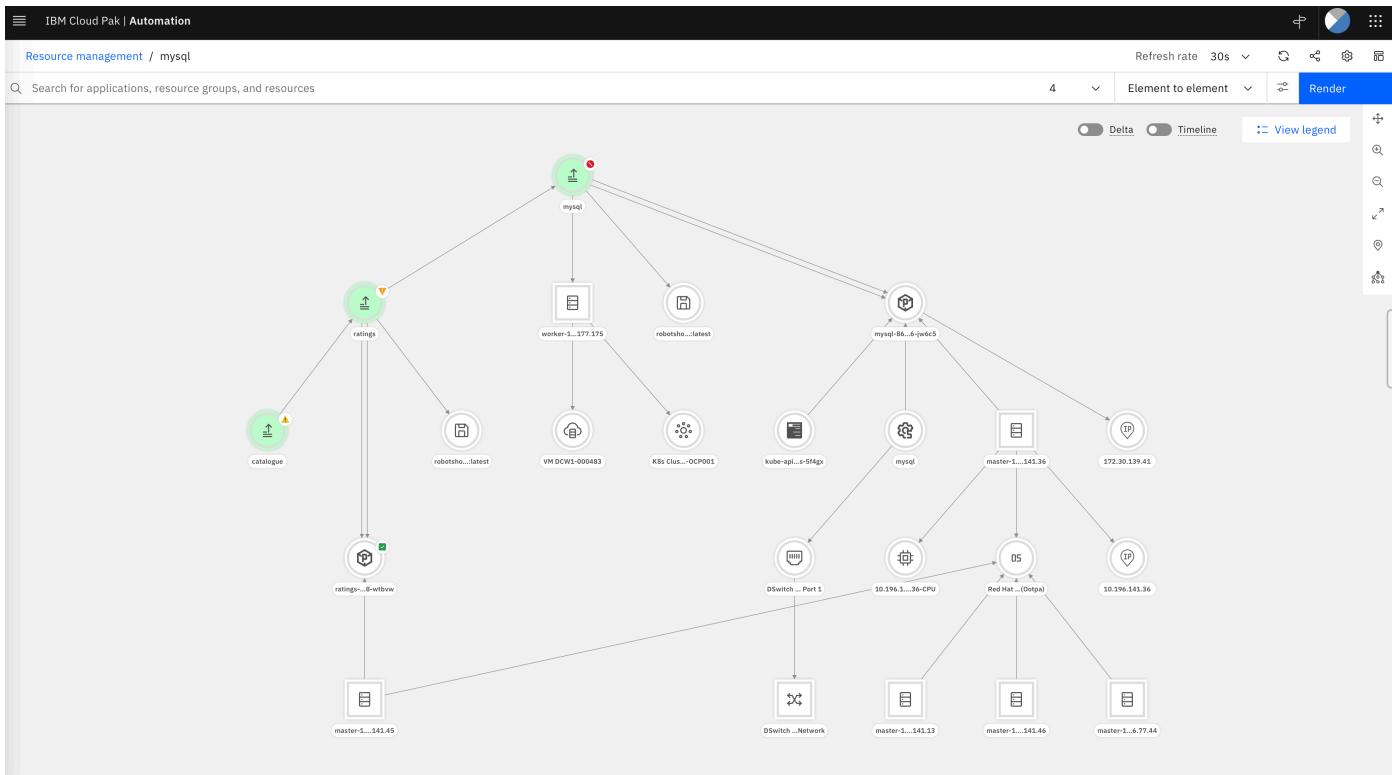
Find the resource which displays resource name “mysql”. Then, right-click and select **Open in Topology Viewer**.

Result: Topology Viewer displays.



Narration

The interface shows the topology surrounding the mysql resource. I can see that the **mysql** deployment is being called by the **ratings** service and that it runs on a certain worker node.



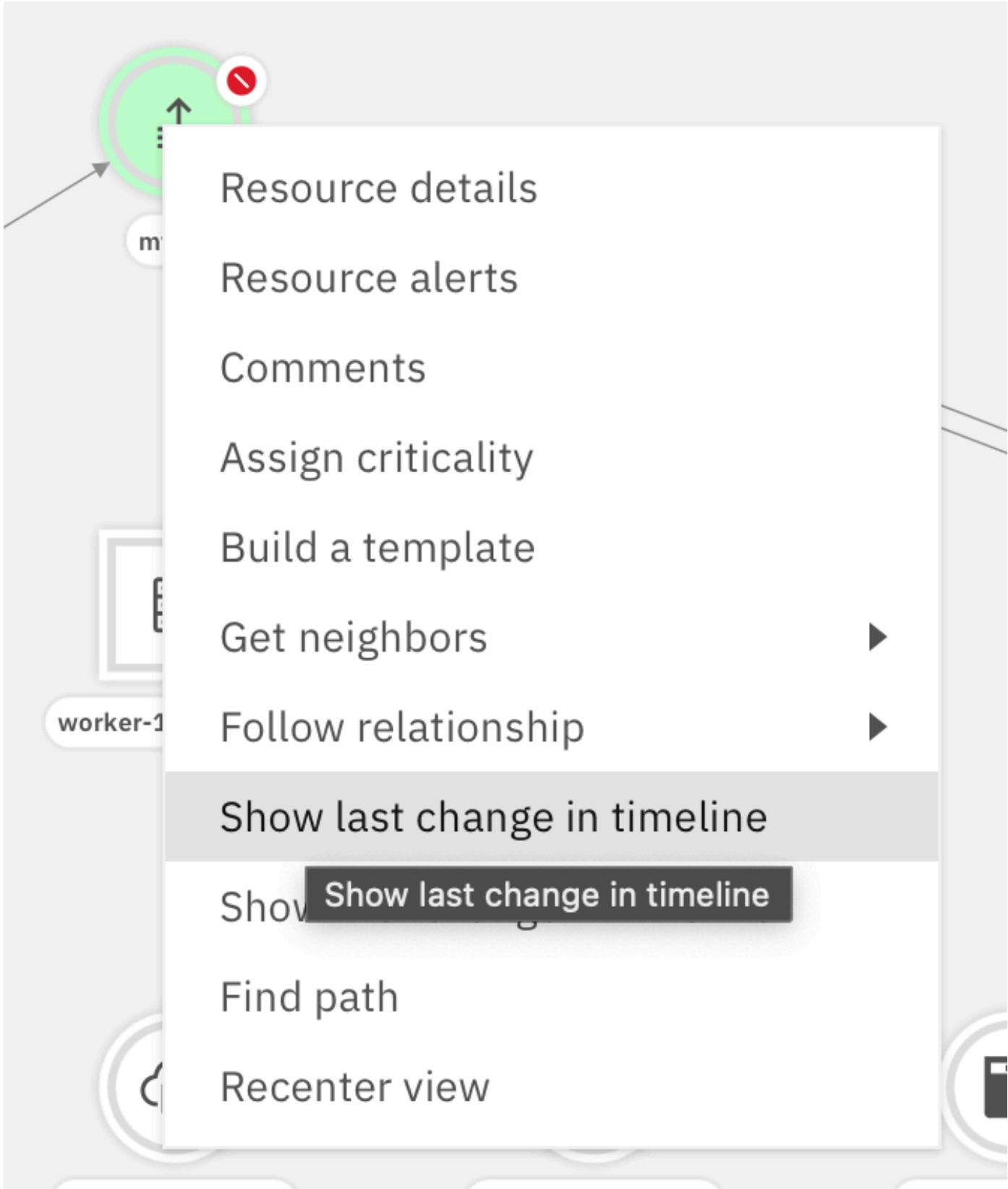


Action
Change the number of hops to **4** and click **Render**.**

Result: Topology Viewer refreshes with bigger topology.



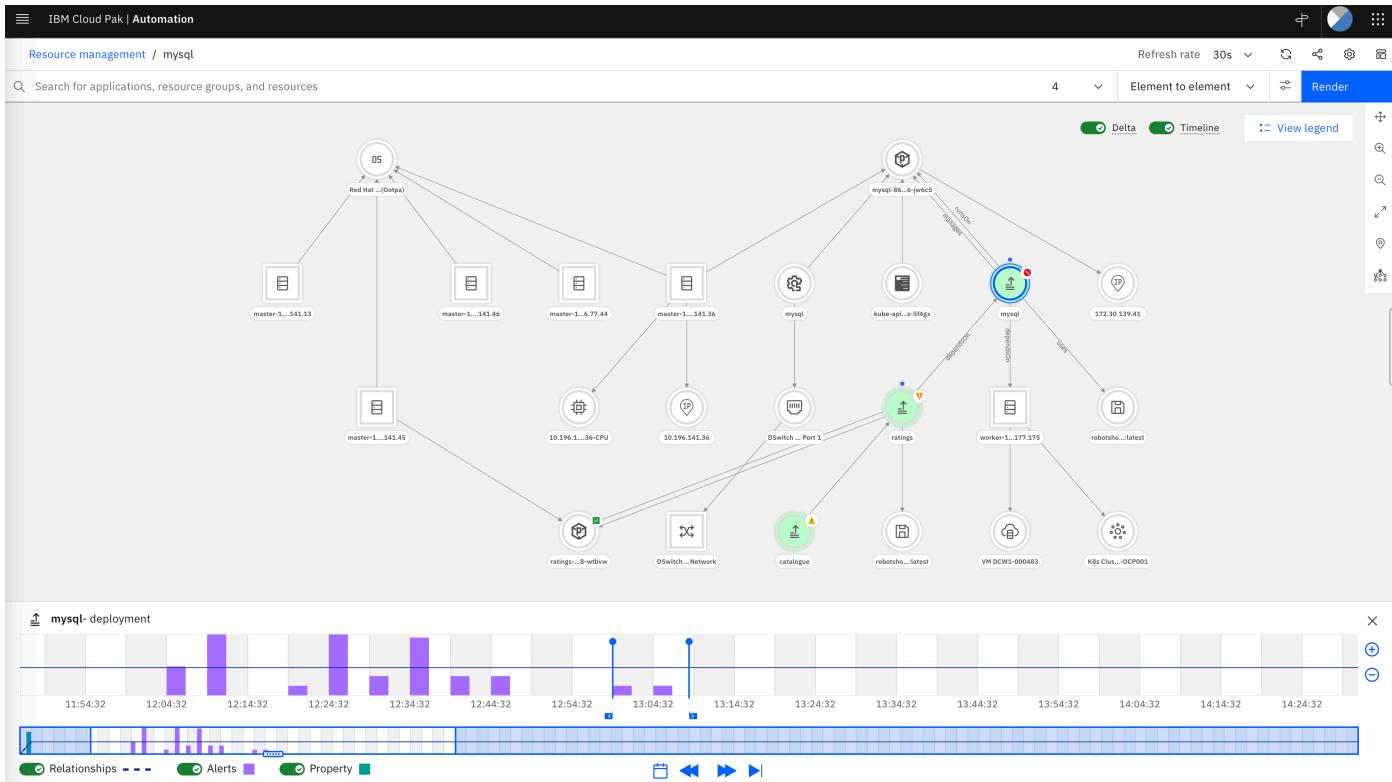
I can also increase the size of the graph, still based on the **mysql** deployment.



Action

Right-click on mysql and select **Show last change in timeline** and check **Delta**

Result: Topology Viewer refreshes and shows the events over time.



Narration

Now I will examine the historical events for the **mysql** component. I can see the **Alerts** that have been raised on the **mysql** resource over time.

3.4.10 Fixing the problem with runbook automation

Action

Click on the **Overview** Tab.

The screenshot shows the IBM Cloud Pak | Automation interface. At the top, there's a navigation bar with 'IBM Cloud Pak | Automation' and various icons. Below it, a breadcrumb trail says 'Stories / Commit in repository robot-shop by Niklaus Hirt on file robot-shop.yaml - New'. On the right, there are buttons for 'Change story settings' and a dropdown for 'Priority 1'. The main area has tabs for 'Overview' (which is selected), 'Alerts', and 'Topology'. The 'Overview' tab displays 'Probable cause alerts' with three items:

- MySQL - available replicas is less than desired replicas - Check conditions and error events
- MySQL - change detected - The value **resources/limits** has changed
- Latency is Higher than expected. Actual: 1050.4840 Expected: 1.5537

Below these are sections for 'Recommended runbooks' (with a search bar) and 'Runbooks for selected alerts' (with a red box around the three dots menu). To the right is a 'Topology' diagram showing nodes: mysql, ratings, mysql-86...-jw6c5, worker-1...-177.175, and robotshop...latest. Arrows indicate connections between them. A 'Resources' section lists mysql, mysql, and mysql. On the far right, there are sections for 'StoryID#3k6q-nsh', 'Assigned', 'Priority 1', 'Opened 1 day', 'Policy DEMO Story creation policy for all a...', 'Slack #cp4waiops-stories', 'User group All users', 'Owner demo', 'Impacted applications 1', and 'Related stories 0'.

Narration

Now that we know what the problem is, let's correct what has happened. A runbook has been automatically identified but have not been executed. Runbooks are guided steps that IT operations teams use to troubleshoot and resolve problems. Some organizations might call these standard operating procedures or playbooks. When an incident occurs, IBM Cloud Pak for Watson AIOps matches an appropriate runbook to the problem. The runbook can be set to run automatically when it is matched to an incident, or it can run with user approval and participation.

Let's execute the Runbook.

Action

Click on the three dots and click **Run**

Click **Start Runbook**.

Run runbook

Mitigate RobotShop Problem (Version 1)

Step 1

Automated step

CP4WAIOPS Mitigate Robotshop Ratings Outage

[More info](#) [Run](#)

Provide feedback

Rate this runbook

☆☆☆☆☆

Help improve this runbook with your feedback [X](#)

Action

Click **Run** in Step 1.

Step 1

Automated step

CP4WAIOPS Mitigate Robotshop Ratings Outage

```
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'  
PLAY [localhost] ****  
TASK [Gathering Facts] ****
```

Run time: 00:00:09
Started: 08/02/2023, 10:09:30
Status: In progress

[Complete](#)

Note

! The execution of the runbook can take few minutes.

Narration

The Runbook that I just started kicks off a Playbook on Ansible Tower. I can follow the execution as it connects to the cluster and then scales up memory for the MySQL deployment.

Step 1

Automated step

CP4WAIOPS Mitigate Robotshop Ratings Outage

```
hY2NvdW50liw3a3ViZXJuZXRicy5pbv9zZXJ2aWN1YWNg3VudC9uYW1lc3BhY2Ui01JKZWhdWx0liwia3ViZXJuZXRicy5pbv9zZXJ2aWN1YWNg3VudC9zZWNyZXQubmFtZSi6ImR1bw8tYWRTaW4tdG9rZW4ta2I5d0c1LC1rdW1cm51dGV2lmlvL3NlcnPzY2VhY2NvdW50L3NlcnPzY2UtYWNjb3VudC5uYW11IjoizGVtby1hZG1pbii6imt1YmVybmv0ZXMuaw8vc2VydmljZWFjY291bnQvc2VydmljZS1hY2NvdW50LnVpZC16imJhY2Y3NWYLTQwZmEtND1zz111MTRKLWRKMWE4ZDiyMmI2ZiIsInN1Yi6InN5c3R1bTpzZXJ2aWN1YWNg3VudDpkZWzhdwx00mR1bw8tYWRTaw4ifq.AcEG9qinkk6gZ9mR5dvZ3AhRCg-cyI-grjTwa_6SV_zNgaYyUMZ8eIp5UQ8YvOLXjsUzWTuU20GsxDxh8cWuNbnnj9J0BK-ek_Szdn8W7Bc0zgy74TisF_Bzc5rRD158hRcq502JbxJG0EfhwPP3yvf4xb9HX4XvkkCKoV1hRmYU1hR1RkGo4tbRi-zlagf0tq10GQ81VBu_IYtg0017UvwJgGXEn2gUpSwecreJHWzjfvejsib0sXYcek1dK6YvGOPe6HDqaJUVzMwg1dihe51bwErRecI-0isYc16YCrE52av9s7ZqmIbAaZrYGB7a0Gg2BuwR6IP2mQ"
```

Run time: 00:00:18
Started: 08/02/2023, 10:09:30
Status:  Successful

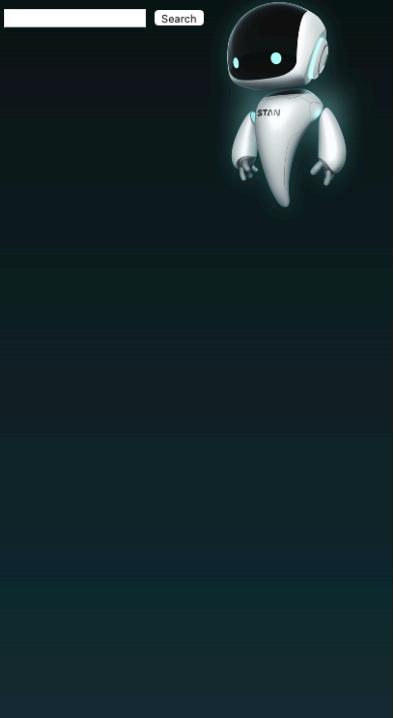
Complete

Action

When finished, click **Complete**.

Open the RobotShop application. Verify that ratings are correctly shown

Stan's Robot Shop



Narration

Before confirming that the runbook worked as expected, I should check the RobotShop application to see if it is working as expected.

Provide feedback

Rate this runbook

★★★★★

Comments

Runbook did not work Runbook worked

Action

Rate the Runbook

Then click **Runbook Worked**.

Narration

So the runbook has resolved the problem. When I tell Watson AIOps that the Runbook worked, it will learn over time to prioritize and suggest more relevant Runbooks.

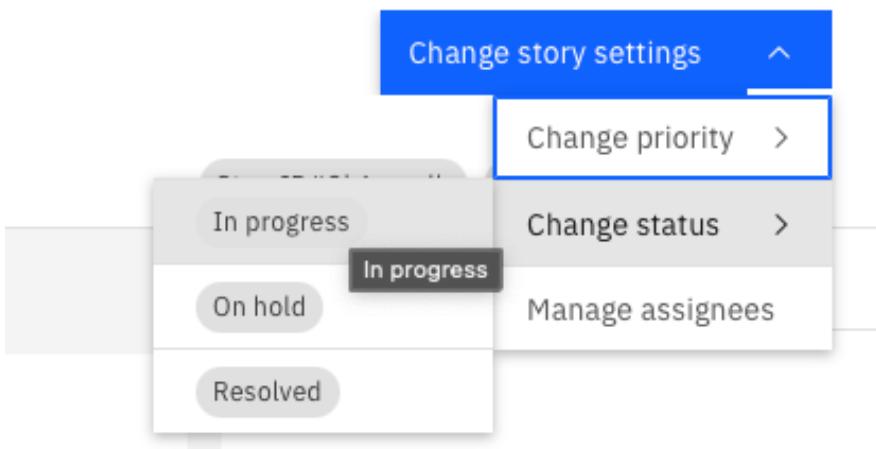
3.4.4 Resolve the Incident



Action
Click on **Change Story Settings**.

Select **Change Status**.

Click on **Resolved**



Narration
So now as we have resolved the problem, I will inform the development team of the problem by reopening the ServiceNow ticket and by closing the Story.

Demonstration summary

Today, I have shown you how Cloud Pak for Watson AIOps can assist the SRE/Operations team to identify, verify, and ultimately correct an issue with a modern, distributed application running in a cloud-native environment. The presented solution provides automatic application topology discovery, anomaly detection both with metrics and logs, and sophisticated methods of correlation of events coming from different sources. You have also seen how integration with other tools allow the effective implementation of a ChatOps environment.