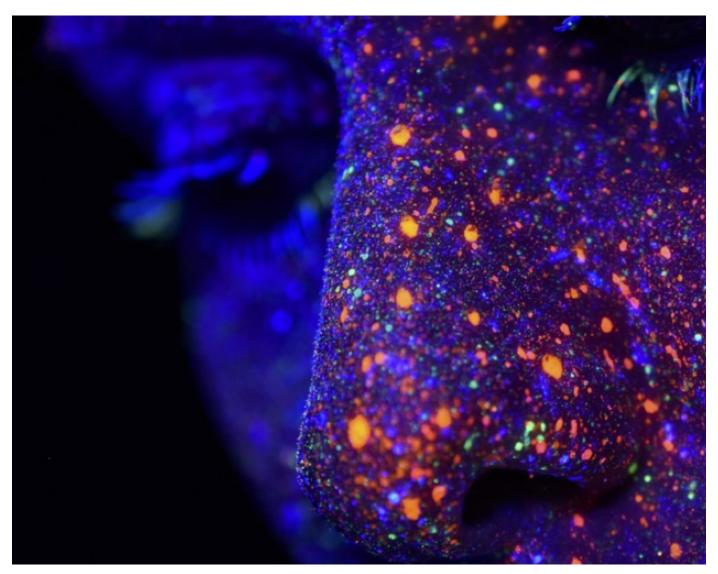
# **CP4WatsonAlOps CP4WAIOPS v.3.4.0**

Demo Environment Installation - Short Track 🚀



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## ! THIS IS WORK IN PROGRESS

Please drop me a note on Slack or by mail <a href="mailto:nikh@ch.ibm.com">nikh@ch.ibm.com</a> if you find glitches or problems.

## Installation



Those are the steps that you have to execute to install a complete demo environment:

- 1. Al Manager Installation
- 2. Al Manager Configuration
- 3. Slack integration
- 4. Demo the Solution
- You can find a PDF version of this guide here: PDF.
- **3 3 5 Mere** is a video that walks you through the complete installation process.

# TLDR - Fast Track

These are the high level steps that you need to execute to install the demo environment

- 1. Install Al Manager
  - 1. Install directly from the OCP Web UI
    - 1. In the the OCP Web UI click on the + sign in the right upper corner
    - 2. Copy and paste the content from this file
    - 3. Replace <REGISTRY\_TOKEN> at the end of the file with your pull token from step 1.3.1
    - 4. Click **Save**
  - 2. Install from your PC

```
ansible-playbook ./ansible/01_cp4waiops-aimanager-all.yaml -e
CP_ENTITLEMENT_KEY=<REGISTRY_TOKEN>
```

- 1. Al Manager Configuration
- 2. Slack integration

# Old documentation for reference

- Info
  - o Changelog
  - <u>Demo Architecture</u>
  - <u>Detailed Prerequisites</u>
  - <u>Troubleshooting</u>
- Installation
  - Event Manager Install
  - Event Manager Configuration
  - Uninstall CP4WAIOPS
- Configuration
  - Manual Runbook Configuration
  - Additional Configuration
  - Service Now integration
- Install additional components
  - <u>Installing Turbonomic</u>
  - <u>Installing ELK</u>

# 1 Introduction

This document is a short version of the full <u>README</u>  $\stackrel{\bullet}{\mathcal{C}}$  that contains only the essential steps.

This is provided as-is:

- I'm sure there are errors
- I'm sure it's not complete
- It clearly can be improved

! This has been tested for the new CP4WAIOPS v.3.4.0 release on OpenShift 4.8 (4.10 not being available on Techzone yet) on ROKS

So please if you have any feedback contact me

• on Slack: @niklaushirt or

• by Mail: <a href="mailto:nikh@ch.ibm.com">nikh@ch.ibm.com</a>

## 1.1 Get the code

Clone the GitHub Repository

From IBM internal:

```
git clone https://<YOUR GIT TOKEN>@github.ibm.com/NIKH/cp4waiops-deployer.git
```

Or my external repo:

```
git clone https://github.com/niklaushirt/cp4waiops-deployer.git
```

## 1.2 Prerequisites

## 1.2.1 OpenShift requirements

I installed the demo in a ROKS environment.

You'll need:

- ROKS 4.8
- 5x worker nodes Flavor **b3c.16x64** (so 16 CPU / 64 GB)

You **might** get away with less if you don't install some components (Event Manager, ELK, Turbonomic,...) but no guarantee:

• Typically 4x worker nodes Flavor b3c.16x64 for only Al Manager

## 1.2.2 Tooling

You need the following tools installed in order to follow through this guide (if you decide to install from your PC):

- ansible
- oc (4.7 or greater)
- jq
- kafkacat (only for training and debugging)
- elasticdump (only for training and debugging)
- IBM cloudctl (only for LDAP)

## 1.2.1 On Mac - Automated (preferred)

Only needed if you decide to install from your PC

Just run:

./10\_install\_prerequisites\_mac.sh

## 1.2.2 On Ubuntu - Automated (preferred)

Only needed if you decide to install from your PC

Just run:

./11\_install\_prerequisites\_ubuntu.sh

## 1.3 Pull Secrets

## 1.3.1 Get the CP4WAIOPS installation token

You can get the installation (pull) token from <a href="https://myibm.ibm.com/products-services/containerlibrary">https://myibm.ibm.com/products-services/containerlibrary</a>.

This allows the CP4WAIOPS images to be pulled from the IBM Container Registry.

# 2 AI Manager Installation

You have different options:

- 1. **Install directly from the OCP Web UI** (no need to install anything on your PC)
  - 1. In the the OCP Web UI click on the + sign in the right upper corner
  - 2. Copy and paste the content from this file
  - 3. Replace < REGISTRY TOKEN> at the end of the file with your pull token from step 1.3.1
  - 4. Click Save
- 2. **Install from your PC** with the token from 1.3.1

```
ansible-playbook ./ansible/01 cp4waiops-aimanager-all.yaml -e CP ENTITLEMENT KEY=
<REGISTRY TOKEN>
```

- 3. **Install with the Easy Installer** *with the token from 1.3.1* 
  - 1. Just run:

```
./01 easy-install.sh -t <REGISTRY TOKEN>
```

2. Select option 🐣 01 to install the complete AI Manager environment with Demo Content.

This takes about 1.5 to 2 hours.

After completion Easy Installer will exit, open the documentation and the Al Manager webpage (on Mac) and you'll have to to perform the last manual steps.

You now have a full, basic installtion of Al Manager with:

- Al Manager
- Open LDAP & Register with Al Manager
- RobotShop demo application
- Trained Models based on precanned data (Log- and Metric Anomalies, Similar Incidents, Change
- Topologies for demo scenarios
- AWX (OpenSource Ansible Tower) with runbooks for the demo scenarios
- Demo UI
- Demo Service Account
- Creates valid certificate for Ingress (Slack)
- External Routes (Flink, Topology, ...)Create Policy Creation for Stories and Runbooks

# 3. Al Manager Configuration

Those are the manual configurations you'll need to demo the system and that are covered by the flow above.

#### **Configure Topology**

1. Re-Run Kubernetes Observer

#### **Configure Slack**

1. Setup Slack

## 3.1 First Login

After successful installation, the Playbook creates a file ./LOGINS.txt in your installation directory (only if you installed from your PC).

i You can also run ./tools/20\_get\_logins.sh at any moment. This will print out all the relevant passwords and credentials.

# 3.1.1 Login as admin

Open the LOGINS.txt file that has been created by the Installer in your root directory

```
CloudPak for Watson AIOps

AI Manager

AI Manager

URL: https://cpd-cp4waiops.itzroks-270003bu3k-q580lw-6ccd7f378ae819553d37d5f2ee142bd6-0000.eu-gb.containers.appdomain.cloud

V User: oceno
AP Password: P4ssw0rd!

User: admin
Password: XoFT1bfIu5Ng4EUJWEM7Mq8rIAi1QIHN

AI Manager

AI Manager

VRL: https://cpd-cp4waiops.itzroks-270003bu3k-q580lw-6ccd7f378ae819553d37d5f2ee142bd6-0000.eu-gb.containers.appdomain.cloud

VI User: admin
AI Password: XoFT1bfIu5Ng4EUJWEM7Mq8rIAi1QIHN

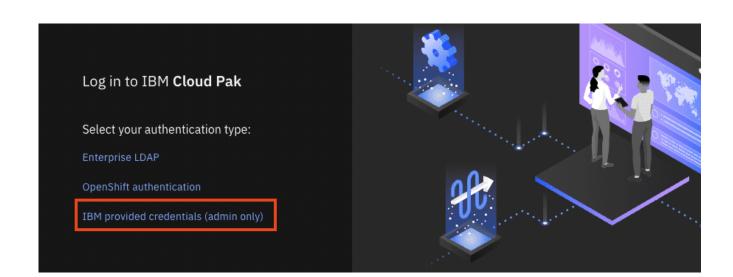
AI Manager

VI User: admin
AI Password: XoFT1bfIu5Ng4EUJWEM7Mq8rIAi1QIHN

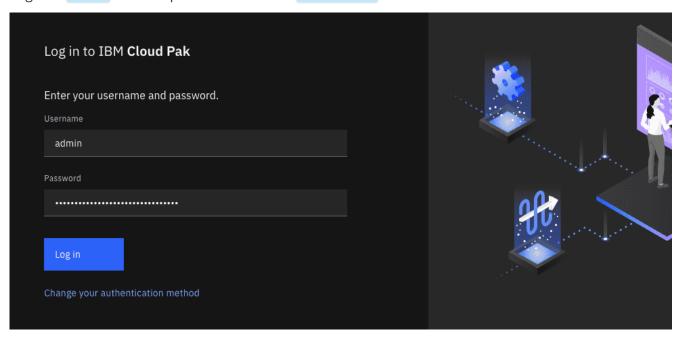
VI User: admin
AI Manager

VI User: admin
AI Manager
```

- Open the URL from the LOGINS.txt file
- Click on IBM provided credentials (admin only)

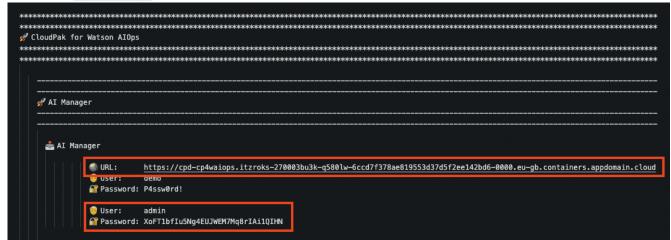


• Login as admin with the password from the Logins.txt file



## 3.1.2 Login as demo User

• Open the LOGINS.txt file that has been created by the Installer in your root directory



- Open the URL from the LOGINS.txt file
- Click on **Enterprise LDAP**
- Login as **demo** with the password **P4ssw0rd!**

# 3.2 Re-Run Kubernetes Integration

In the Al Manager (CP4WAIOPS)

- 1. In the AI Manager "Hamburger" Menu select Define / Data and tool integrations
- 2. Click **Kubernetes**
- 3. Under **robot-shop**, click on **Run** (with the small play button)

# **4 Event Manager Installation**

You have different options:

- 1. **Install directly from the OCP Web UI** (no need to install anything on your PC)
  - 1. In the the OCP Web UI click on the + sign in the right upper corner
  - 2. Copy and paste the content from this file
  - 3. Replace <REGISTRY\_TOKEN> at the end of the file with your pull token from step 1.3.1
  - 4. Click save
- 2. **Install from your PC** with the token from 1.3.1

```
ansible-playbook ./ansible/04_cp4waiops-eventmanager-all.yaml -e
CP_ENTITLEMENT_KEY=<REGISTRY_TOKEN>
```

- 3. **Install with the Easy Installer** *with the token from 1.3.1* 
  - 1. Just run:

```
./01_easy-install.sh -t <REGISTRY_TOKEN>
```

2. Select option  $\stackrel{\leftarrow}{\leftarrow}$  02 to install the complete **Event Manager** environment with Demo Content.

This takes about 1 hour.

# 5. Event Manager Configuration

## 5.1 First Login

After successful installation, the Playbook creates a file ./LOGINS.txt in your installation directory (only if you installed from your PC).

i You can also run ./tools/20\_get\_logins.sh at any moment. This will print out all the relevant passwords and credentials.

## 5.1.1 Login as smadmin

- Open the LOGINS.txt file that has been created by the Installer in your root directory
- Open the URL from the LOGINS.txt file
- Login as smadmin with the password from the LOGINS.txt file

## **5.2 Topology**

## **5.2.1 Create Kubernetes Observer for the Demo Applications**

This is basically the same as for Al Manager as we need two separate instances of the Topology Manager.

- In the **Event Manager** "Hamburger" Menu select **Administration / Topology Management**
- Under Observer jobs click Configure
- Click Add new job
- Under Kubernetes, click on Configure
- Choose local for Connection Type
- Set Unique ID to robot-shop
- Set data\_center to robot-shop
- Under Additional Parameters
- Set Terminated pods to true
- Set Correlate to true
- Set Namespace to robot-shop
- Under Job Schedule
- Set **Time Interval** to 5 Minutes
- Click **Save**

# **5.3 EventManager Webhook**

Create Webhooks in EventManager for Event injection and incident simulation for the Demo.

The demo scripts (in the demo folder) give you the possibility to simulate an outage without relying on the integrations with other systems.

### At this time it simulates:

- Git push event
- Log Events (ELK)
- Security Events (Falco)
- Instana Events
- Metric Manager Events (Predictive)
- Turbonomic Events
- CP4MCM Synthetic Selenium Test Events

You have to define the following Webhook in EventManager (NOI):

- Administration / Integration with other Systems
- Incoming / New Integration
- Webhook
- Name it **Demo Generic**
- Jot down the WebHook URL and copy it to the **NETCOOL\_WEBHOOK\_GENERIC** in the ./tools/01\_demo/incident\_robotshop-noi.sh file
- Click on Optional event attributes
- Scroll down and click on the + sign for URL
- Click Confirm Selections

Use this json:

```
"timestamp": "1619706828000",
    "severity": "Critical",
    "summary": "Test Event",
    "nodename": "productpage-v1",
    "alertgroup": "robotshop",
    "url": "https://pirsoscom.github.io/grafana-robotshop.html"
}
```

Fill out the following fields and save:

• Severity: severity

• Summary: summary

• Resource name: **nodename** 

• Event type: alertgroup

• Url: url

• Description: "url"

Optionnally you can also add **Expiry Time** from **Optional event attributes** and set it to a convenient number of seconds (just make sure that you have time to run the demo before they expire.

## **5.4 Create custom Filters and Views**

## 5.4.1 Filter

- In the **Event Manager** "Hamburger" Menu select **Netcool WebGui**
- Click Administration
- Click Filters
- Select **Global Filters** from the DropDown menu
- Select **Default**
- Click **copy Filter** (the two papers on the top left)
- Set to **global**
- Click **ok**
- Name: AIOPS
- Logic: **Any** ! (the right hand option)
- Filter:
  - AlertGroup = 'CEACorrelationKeyParent'
  - AlertGroup = 'robot-shop'

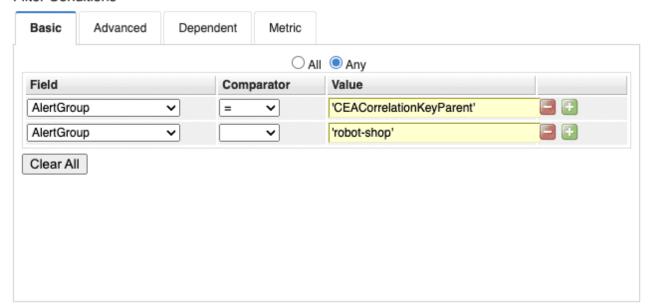
#### Edit Filter: New Filter

#### Filter Attributes

* Name:	AIOPS	
Default view:	Default	~
Collection:		
Description:		
		//

Data Source: ▶ Click to show

#### Filter Conditions



## 5.4.2 View

- In the **Event Manager** "Hamburger" Menu select **Netcool WebGui**
- Click Administration
- Click **Views**
- Select **System Views** from the DropDown menu
- Select Example\_IBM\_CloudAnalytics
- Click **copy View** (the two papers on the top left)
- Set to **global**
- Click **ok**
- Name: AIOPS
- Configure to your likings.

# **5.5 Create grouping Policy**

- In the **Event Manager** "Hamburger" Menu select **Netcool WebGui**
- Click Insights
- Click Scope Based Grouping
- Click Create Policy
- Action select fielt Alert Group
- Toggle **Enabled** to **On**
- Save

## 5.6 Create Menu item

In the Netcool WebGUI

- Go to Administration / Tool Configuration
- Click on LaunchRunbook
- Copy it (the middle button with the two sheets)
- Name it Launch URL
- Replace the Script Command with the following code

```
var urlId = '{$selected_rows.URL}';

if (urlId == '') {
    alert('This event is not linked to an URL');
} else {
    var wnd = window.open(urlId, '_blank');
}
```

Save

#### Then

- Go to Administration / Menu Configuration
- Select alerts
- Click on **Modify**
- Move Launch URL to the right column
- Save

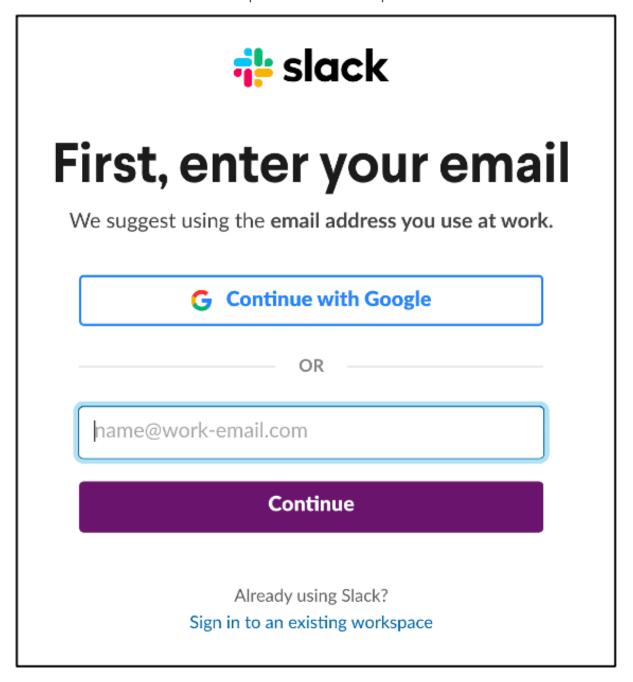
# 6. Slack integration

For the system to work you need to follow those steps:

- 1. Create Slack Workspace
- 2. Create Slack App
- 3. Create Slack Channels
- 4. Create Slack Integration
- 5. Get the Integration URL
- 6. Create Slack App Communications
- 7. Slack Reset

## **6.1 Create your Slack Workspace**

1. Create a Slack workspace by going to <a href="https://slack.com/get-started#/createnew">https://slack.com/get-started#/createnew</a> and logging in with an email which is not your IBM email. Your IBM email is part of the IBM Slack enterprise account and you will not be able to create an independent Slack workspace outside if the IBM slack service.



2. After authentication, you will see the following screen:



# Create a new Slack workspace

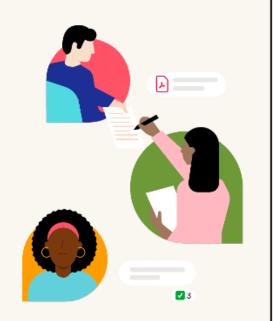
Slack gives your team a home — a place where they can talk and work together. To create a new workspace, click the button below.

Tip: Use the email you use for work. That makes it easy to get the rest of your team on Slack. Change email



It's okay to send me emails about Slack.

By continuing, you're agreeing to our Customer Terms of Service, Privacy Policy, and Cookie Policy.



- 3. Click Create a Workspace ->
- 4. Name your Slack workspace

Step 1 of 3

# What's the name of your company or team?

This will be the name of your Slack workspace - choose something that your team will recognize.

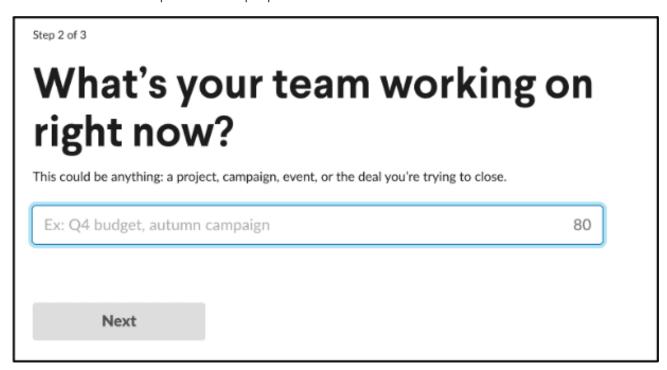
Ex: Acme Marketing or Acme Co

255

Next

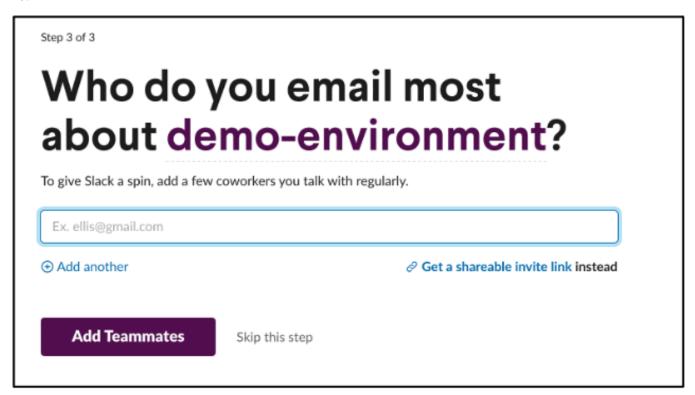
Give your workspace a unique name such as aiops-<yourname>.

5. Describe the workspace current purpose



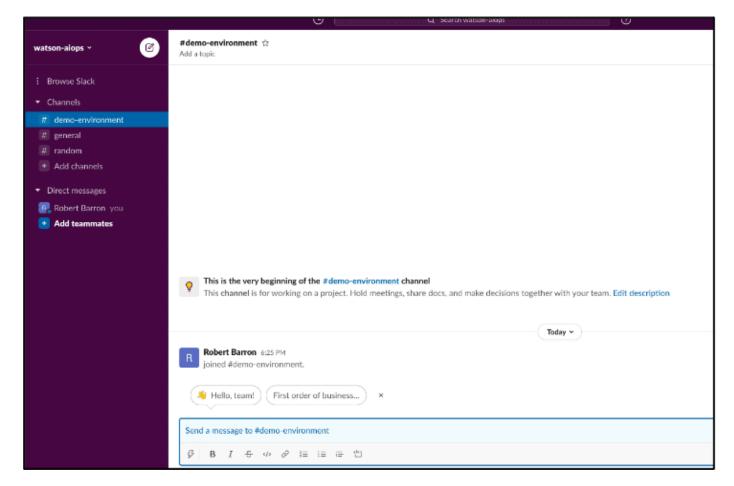
This is free text, you may simply write "demo for Watson AlOps" or whatever you like.

6.



You may add team members to your new Slack workspace or skip this step.

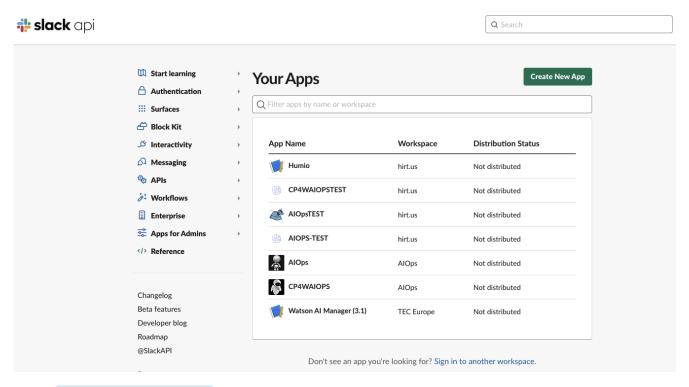
At this point you have created your own Slack workspace where you are the administrator and can perform all the necessary steps to integrate with CP4WAOps.



**Note**: This Slack workspace is outside the control of IBM and must be treated as a completely public environment. Do not place any confidential material in this Slack workspace.

## **6.2 Create Your Slack App**

1. Create a Slack app, by going to <a href="https://api.slack.com/apps">https://api.slack.com/apps</a> and clicking <a href="create New App">create New App</a>.



Х

2. Select From an app manifest

## Create an app

Choose how you'd like to configure your app's scopes and settings.

#### From scratch

Use our configuration UI to manually add basic info, scopes, > settings, & features to your app.

#### From an app manifest BETA

Use a manifest file to add your app's basic info, scopes, settings & features to your app.

Need help? Check our documentation, or see an example

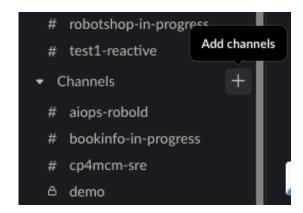
- 3. Select the appropriate workspace that you have created before and click Next
- 4. Copy and paste the content of this file <a href="https://doc/slack/slack-app-manifest.yaml">./doc/slack/slack-app-manifest.yaml</a>.

  Don't bother with the URLs just yet, we will adapt them as needed.
- 5. Click Next

- 6. Click **Create**
- 7. Scroll down to Display Information and name your CP4WAIOPS app.
- 8. You can add an icon to the app (there are some sample icons in the ./tools/4\_integrations/slack/icons folder.
- 9. Click save changes
- 10. In the Basic Information menu click on Install to Workspace then click Allow

## **6.3 Create Your Slack Channels**

- 1. In Slack add a two new channels:
  - o aiops-demo-reactive
  - o aiops-demo-proactive

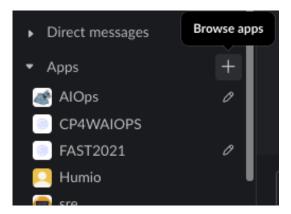


2. Right click on each channel and select **Copy Link** 

This should get you something like this <a href="https://xxxx.slack.com/archives/C021QOY16BW">https://xxxx.slack.com/archives/C021QOY16BW</a> The last part of the URL is the channel ID (i.e. C021QOY16BW)

Jot them down for both channels

3. Under Apps click Browse Apps



- 4. Select the App you just have created
- 5. Invite the Application to each of the two channels by typing

@<MyAppname>

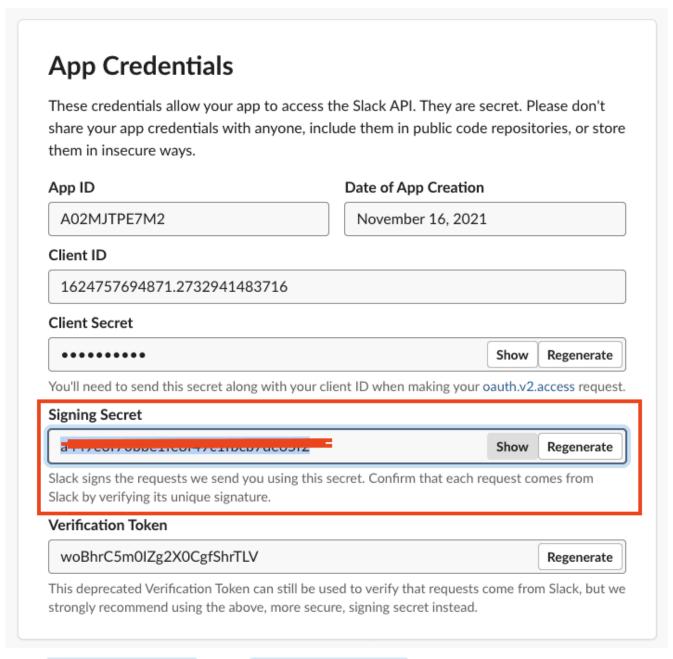
6. Select Add to channel

You should get a message from saying was added to #<your-channel> by ...

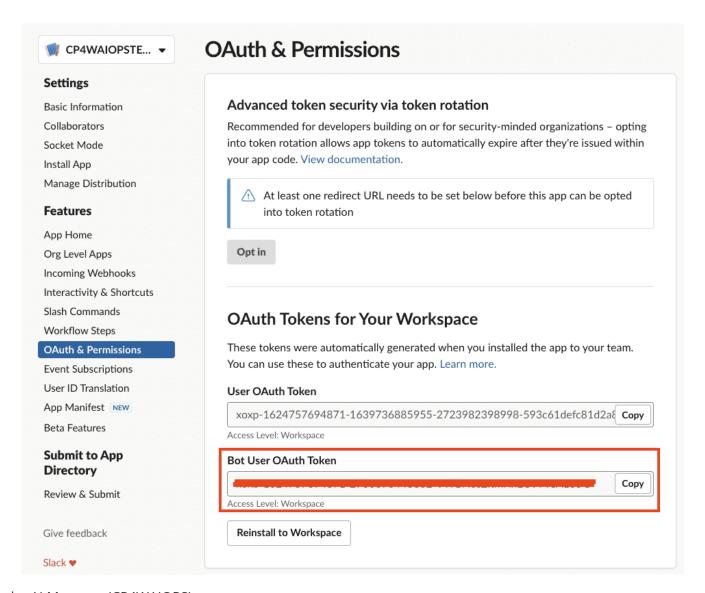
## **6.4 Integrate Your Slack App**

In the Slack App:

1. In the Basic Information menu get the Signing Secret (not the Client Secret!) and jot it down

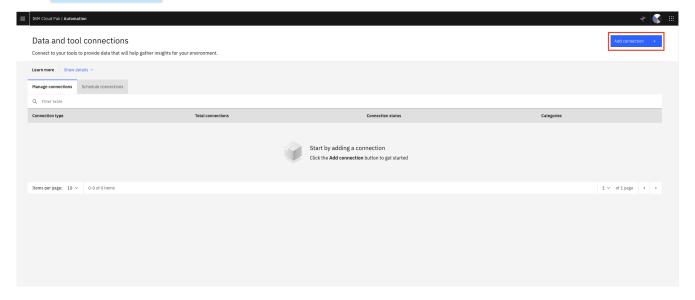


2. In the OAuth & Permissions get the Bot User OAuth Token (not the User OAuth Token!) and jot it down

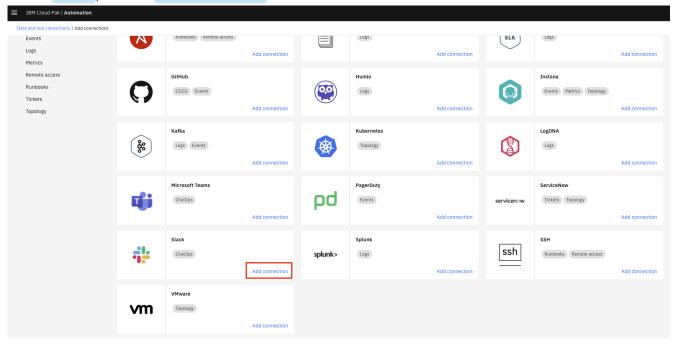


#### In the Al Manager (CP4WAIOPS)

- 1. In the AI Manager "Hamburger" Menu select Define / Data and tool integrations
- 2. Click Add connection



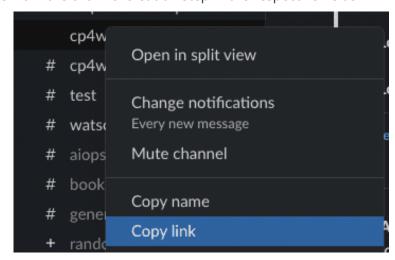
3. Under **Slack**, click on **Add Connection** 

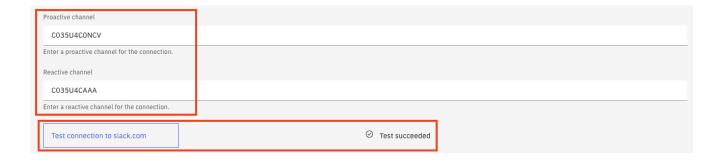


- 4. Name it "Slack"
- 5. Paste the **signing Secret** from above
- 6. Paste the **Bot User OAuth Token** from above



7. Paste the channel IDs from the channel creation step in the respective fields



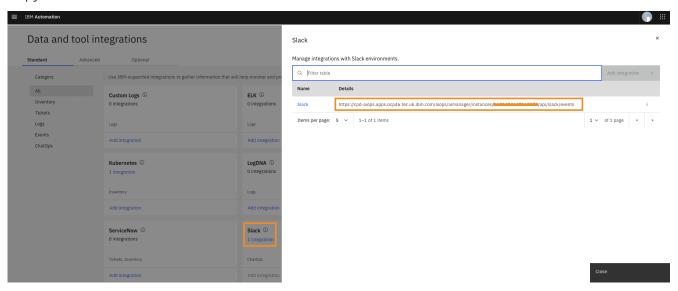


8. Test the connection and click save

# **6.5 Create the Integration URL**

In the Al Manager (CP4WAIOPS)

- 1. Go to Data and tool integrations
- 2. Under **Slack** click on **1 integration**
- 3. Copy out the URL



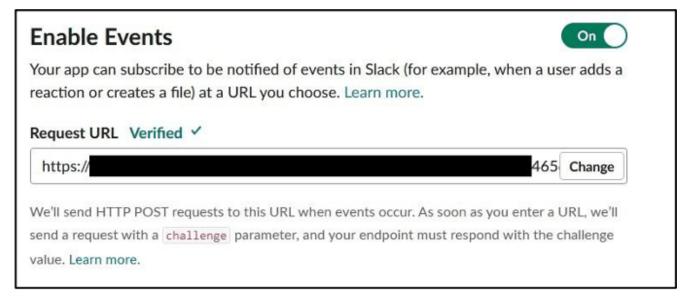
This is the URL you will be using for step 6.

# **6.6 Create Slack App Communications**

Return to the browser tab for the Slack app.

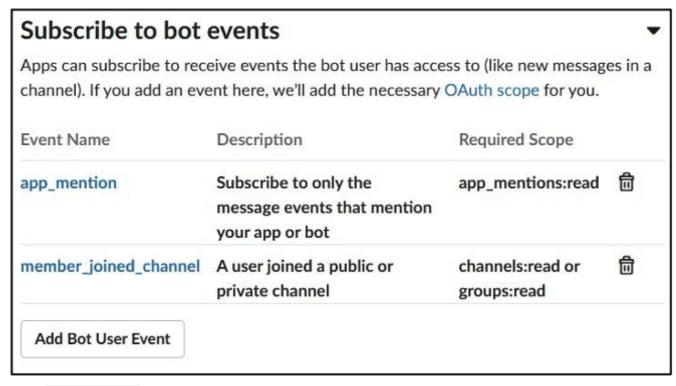
## **6.6.1 Event Subscriptions**

- 1. Select **Event Subscriptions**.
- 2. In the **Enable Events** section, click the slider to enable events.
- 3. For the Request URL field use the **Request URL** from step 5.
  - e.g. https://<my-url>/aiops/aimanager/instances/xxxxx/api/slack/events
- 4. After pasting the value in the field, a *Verified* message should display.



If you get an error please check 5.7

- 5. Verify that on the **Subscribe to bot events** section you got:
  - o app\_mention and
  - member\_joined\_channel events.

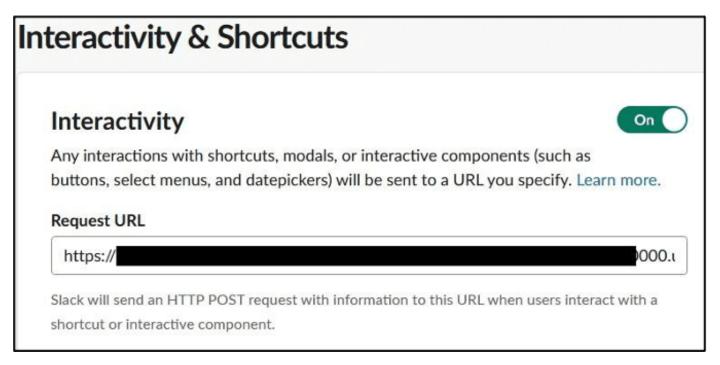


6. Click **Save Changes** button.

## 6.6.2 Interactivity & Shortcuts

- 7. Select Interactivity & Shortcuts.
- 8. In the Interactivity section, click the slider to enable interactivity. For the **Request URL** field, use use the URL from above.

There is no automatic verification for this form



9. Click save Changes button.

## 6.6.3 Slash Commands

Now, configure the **welcome** slash command. With this command, you can trigger the welcome message again if you closed it.

- 1. Select **Slash Commands**
- 2. Click **create New Command** to create a new slash command.

Use the following values:

Field	Value
Command	/welcome
Request URL	the URL from above
Short Description	Welcome to Watson AlOps

3. Click Save.

## 6.6.4 Reinstall App

The Slack app must be reinstalled, as several permissions have changed.

- 1. Select Install App
- 2. Click Reinstall to Workspace

Once the workspace request is approved, the Slack integration is complete.

If you run into problems validating the **Event Subscription** in the Slack Application, see 5.2

## 6.7 Slack Reset

### 6.7.1 Get the User OAUTH Token

This is needed for the reset scripts in order to empty/reset the Slack channels.

This is based on **Slack Cleaner2**.

You might have to install this:

```
pip3 install slack-cleaner2
```

#### Reset reactive channel

In your Slack app

1. In the OAuth & Permissions get the User OAuth Token (not the Bot User OAuth Token this time!) and jot it down

In file ./tools/98\_reset/13\_reset-slack.sh

- 2. Replace **not\_configured** for the **SLACK\_TOKEN** parameter with the token
- 3. Adapt the channel name for the **SLACK\_REACTIVE** parameter

#### Reset proactive channel

In your Slack app

1. In the OAuth & Permissions get the User OAuth Token (not the Bot User OAuth Token this time!) and jot it down (same token as above)

In file ./tools/98\_reset/14\_reset-slack-changerisk.sh

- 2. Replace **not\_configured** for the **SLACK\_TOKEN** parameter with the token
- 3. Adapt the channel name for the **SLACK PROACTIVE** parameter

## 6.7.2 Perform Slack Reset

Call either of the scripts above to reset the channel:

```
./tools/98_reset/13_reset-slack.sh

or

./tools/98_reset/14_reset-slack-changerisk.sh
```

# 7. Demo the Solution

## 7.1 Simulate incident - Command Line

Make sure you are logged-in to the Kubernetes Cluster first

In the terminal type

./22\_simulate\_incident\_robotshop.sh

This will delete all existing Alerts/Stories and inject pre-canned event, metrics and logs to create a story.

- Give it a minute or two for all events and anomalies to arrive in Slack.
- i You might have to run the script 3-4 times for the log anomalies to start appearing.