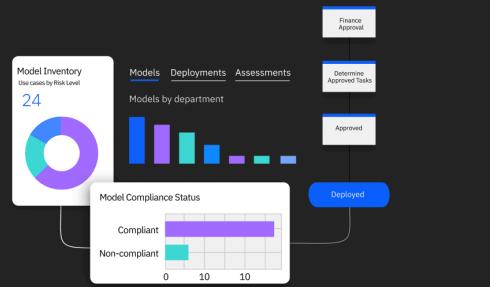


Govern generative AI models built on any platform and deployed on cloud or on-premises

watsonx.governance



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Introduction

Welcome to the configuration section of Level 4 Proof of Experience (PoX) hands-on lab for watsonx.governance. In this lab, you will provision an environment that will allow you to perform a watsonx.governance PoX. You will then configure that environment to enable the relevant services and integrations, and will load sample user data to provide a richer, more realistic PoX experience for your client.

Provisioning an environment through TechZone will install the required services necessary for the PoX in a dedicated software environment. However, this step can take up to seven hours, so plan accordingly.

The configurations performed in this lab are more specific to Cloud Pak for Data and the individual services, and less related to the watsonx.governance solution. However, your client may be interested in seeing some of these, such as creating users in Cloud Pak for Data, or loading sample data into the governance console.

Note: You will need some of the credentials and user information from this lab when you proceed with the [watsonx.governance Level 4 PoX hands-on lab](#).

Getting help - PLEASE READ

This is an extremely lengthy, highly technical lab that touches on multiple products and environments that are all under active development. Every effort has been made to address possible causes and issues in the instructions themselves; however, it is not uncommon for problems to arise, error messages to appear, or screens to sometimes differ from the lab instructions.

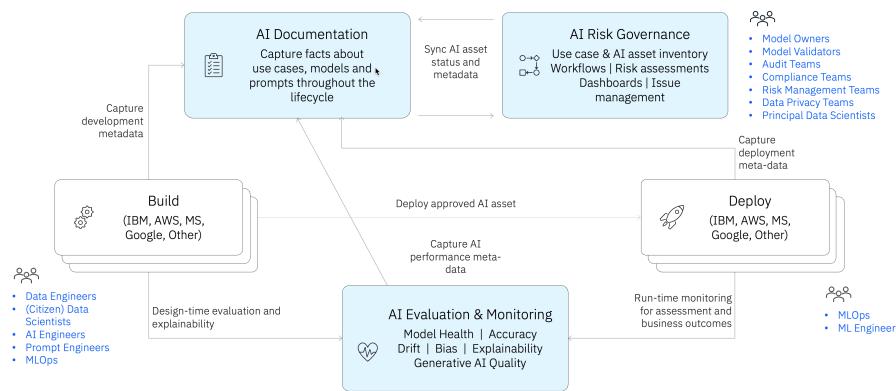
⚠ Please refer to the [Troubleshooting](#) section of the lab first to see if your problem is addressed there. That section will be continually updated to respond to the most frequent issues encountered in running the lab.

❗ If your issue is not addressed, PLEASE contact the author via Slack if at all possible. IBMers can reach Eric Martens [via Slack](#). Business partners can reach out via [email](#).

Leaving comments on the YourLearning page or attempting to address issues via a TechZone ticket will eventually get a response, but the above two methods are significantly preferred and will result in a much quicker resolution.

Architecture

The diagram below shows the overall architecture of the watsonx.governance solution:



i Note the white **Build** and **Deploy** tiles are not dependent on IBM software or platforms. The watsonx.governance solution can work with models built and deployed in any environment.

During build time, metadata such as training data sets, frameworks, runtimes, and prompts can be captured automatically (for IBM development environments) or with a few lines of code in a Jupyter notebook (for third-party environments). This metadata passes to the model's Factsheet, which is maintained on Cloud Pak for Data. Factsheet data is automatically synced to the watsonx.governance console (IBM OpenPages) where it can be viewed by appropriate stakeholders.

Also during build time, AI engineers and prompt engineers can take advantage of the watsonx.governance monitoring capabilities hosted on Cloud Pak for Data to evaluate their models and prompts. As the diagram shows, this evaluation data is automatically recorded in the Factsheet for the model, and again, synced to the governance console.

Deploying a model (using IBM or third-party infrastructure) also generates metadata, which can once again be captured and stored on the model's Factsheet. Additionally, the watsonx.governance monitoring service can then begin run-time assessments of the model. For third-party models and IBM-hosted models in pre-production environments, model output and evaluation data can be sent to the watsonx.governance monitoring service via Python SDK, REST API, or direct file upload. For IBM-hosted models in production environments, model output is automatically recorded in the monitoring service's datamart. The datamart can be hosted either in the same Cloud Pak for Data environment as the monitoring service, or externally by providing connection information.

The monitoring service uses data in the datamart to calculate metrics, which are automatically updated in the model's Factsheet, as well as the governance console.

Environment

At the time this lab was written, the environments available in TechZone are not equipped with Graphics Processing Units (GPUs) to allow for development and some evaluations of generative AI models. While this restriction will likely ease in the future, the lab will use a combination of the software environment on TechZone and a shared Software-as-a-Service environment on IBM Cloud to demonstrate watsonx.governance capabilities. As environments with GPUs become more readily available, or when the full watsonx.governance solution is available on SaaS, the lab will be updated to use a single environment.

i Note that you may be able to access a GPU-enabled environment through IBM, or use a client environment before the instructions have been updated. In that case, the interfaces and capabilities are similar enough that adapting the lab should be relatively straightforward.

Also note that watsonx.governance is undergoing rapid development, and you should expect changes to capabilities, terminology, and user interfaces, particularly when using the SaaS environment. Product screens may differ from lab screenshots. Every effort will be made to update the lab instructions to reflect new features and changes to the user interface, but some flexibility on the part of the user will likely be required.

Finally, be extremely cautious when using environments shared with other sellers for PoX activities, whether they are SaaS accounts or provisioned software clusters. Without provisioning multiple instances of the services in the environment, changes you make and data you load will very likely affect other users. For example, any alterations you make to workflows or views in the governance console (OpenPages) will affect all users of that service instance. **Any user who has the authority to add model subscriptions to the monitoring service (OpenScale) also has the authority to delete or modify any other subscription in the same instance.**

1. Required software and services

An environment provisioned for the Proof of Experience (PoX) will include the base Cloud Pak for Data image, as well as the following services:

- Watsonx.governance (including the OpenPages, OpenScale, and AI Factsheets component services)
- Db2
- Watson Machine Learning
- Watson Studio

The hands-on lab was written using Cloud Pak for Data 5.0.1 and OpenPages 9.0.0.2.

The hands-on lab explores the monitoring and governance of third-party models in Microsoft Azure and Amazon SageMaker. Access to these services can be currently obtained via reservations in TechZone. It is also possible to use the client's third-party services if they would prefer. However, certain portions of the watsonx.governance platform, particularly the predictive model explanation

2. Reserve your environment

You can provision the environment used for the hands-on lab by creating a [TechZone reservation](#).

Once your reservation request has been submitted, note that it can take several hours to provision. You will receive an email notification when the reservation has finished provisioning; however, the environment is not ready to use yet. The Cloud Pak Deployer service still needs to run to install the required software, which typically takes an additional three to four hours. In the next section, you will log into your environment, where you can see the deployer's progress and get login credentials for Cloud Pak for Data when the deployer is finished.

3. Log in to your environment

To begin, you will log into your environment with the credentials provided in your TechZone reservation.

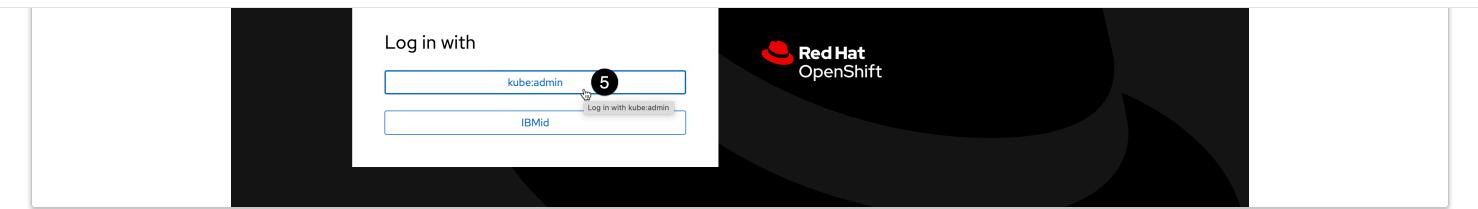
1. Navigate to your [TechZone reservations](#) page.
2. Locate and click on the tile for the environment you reserved in a previous step.

The screenshot shows the 'My reservations' section of the IBM SkillZone interface. It displays two environment tiles. The first tile is for 'CP4D 4.8.3 - Base Installation' and the second is for 'governance test'. Both tiles show the date and time of creation, the expiration date and time, and the current status ('Ready'). The status is indicated by a small icon and the word 'Ready'.

3. Copy and paste the reservation **Username** and **Password** values from the reservation screen into a text file for later use.
4. Click on the **Open your IBM Cloud environment** button. A new tab opens with the Red Hat OpenShift log in form.

The screenshot shows the 'Desktop' reservation detail page. It includes fields for Date, Status, and a large blue button labeled 'Open your IBM Cloud environment' with a mouse cursor icon. Number 4 is circled around this button. Below it, a red box highlights the 'Username' field containing 'kubeadmin'. Number 3 is circled around this field. Further down, there is a 'Shared Reservation' section with a red box around the 'Username' field again, and a 'Purpose' section at the bottom.

5. If given the option to log in with *kube:admin* credentials or *IBMid* credentials, click on *kube:admin*.



- Using the values you copied in step 3, log in to the OpenShift cluster.

4. Get your Cloud Pak for Data credentials

Now that you have successfully logged into your cluster, you will need the credentials to log into Cloud Pak for Data.

- Click the **Pipelines** menu on the left side of the screen to expand it.
- Click the **Pipelines** item from the list.

- Click the **PipelineRuns** tab to select it.
- From the list of pipeline runs, click the link for **cloud-pak-deployer-xxx**. It will likely be the only item in the list. Note that if the run is not listed as "Succeeded" then you will need to wait for it to finish. This pipeline typically takes four hours or longer to run and install all the required software.

- Click on the **Logs** tab.
- Click on the last item in the list on the left, titled **update-configmap-success....**. Note that if this item does not appear in the list, then either the software installation has failed (if the pipeline run is complete) or has not fully finished.
- Copy and paste the **Console Route**, **Username**, and **Password** information from the log window into a text file. Throughout the remainder of this lab, you will use these credentials whenever you are instructed to log into Cloud Pak for Data or watsonx.

5

update-configmap-success-iam

STEP-0C

```
# admin_password
Console Route: cpd-cpd.apps.ocp-110000b3qc-7yjf.cloud.techzone.ibm.com
Username: cpadmin
Password: SFLvp-1 -zphLE
```

configmap/pipeline-output patched

7

- ✓ add-namespace
- ✓ add-sa
- ✓ add-sa-permissions
- ✓ bind-sa-permissions
- ✓ create-pvc
- ✓ get-tz-ibm-entitlement-key
- ✓ assign-ibm-entitlement-key
- ✓ create-entitlement-key-secret
- ✓ configure-cloud-paks-services
- ✓ run-the-deployer
- ✓ update-configmap-success-iam

6

5. Create a user

In this step, you will create a sample user in Cloud Pak for Data. This step is required for the Proof of Experience (PoX) hands-on lab, where you will add the user you create here as a user in the governance console. In a real-world situation, you would create several different users with different roles and levels of permission. However, for the sake of time, you will create a single user and assign them multiple permissions to get an idea of how Cloud Pak for Data and the watsonx.governance services handle user access.

1. Log in to Cloud Pak for Data using the *Console Route URL*, *Username*, and *Password* information you gathered in the previous step.
2. From the home screen, click on the **hamburger menu** in the upper left.
3. Click on the **Administration** menu item to expand it.
4. Click on **Access control** to open the access control screen.

2

Filter navigation

- Home
- Data
- Projects
- Catalogs
- AI governance
- Deployments
- Services
- Administration 3
- Catalogs
- Access control 4
- Monitoring
- Configurations and settings
- Storage volumes
- Support

2

Add users

Stay informed

Alerts

No alerts to display.

Recent projects

No recent projects

Requests

No data available

5. Click on the blue **Add users** button.

6. Fill out the **Profile information** form. Note that the information in the fields can be customized to your client's organization; however, we highly recommend using a generic password like **passwOrd** to avoid login issues. Make a note of the credentials for the user you are creating. You will need them for the Proof of Experience (PoX) hands-on lab.
7. Click **Next** to proceed to the **Platform access** page.

Profile information

Specify the identification and authentication information for the users you want to add.

Full name (optional)
Eric Martens

Username
complianceofficer

Email (optional)
complianceofficer@ibm.com

Password
passwOrd

Confirm password
passwOrd

Add additional user +

Cancel Back **Next** 7

8. Ensure that the **Assign roles directly** tile is selected and click **Next** on the **Platform access** screen to assign roles directly to the user. Note that you can create user access groups to more efficiently manage access, but that is beyond the scope of this lab.
9. Use the checkboxes in the **Roles** section of the screen to assign all roles to the new user. Note that this will govern actions they can perform in Cloud Pak for Data, and will give them all the permissions necessary to perform the lab steps. You can create multiple users with different roles if your client is interested in how Cloud Pak for Data manages roles, but for the sake of simplicity, giving one user all permissions will allow you to focus on the features of watsonx:governance. Clicking on the different roles from this screen will show the various actions that each role is allowed to perform. For more information on these pre-defined roles and the permissions they grant, see the [Cloud Pak for Data documentation](#).
10. Click **Next** to proceed to the **Summary** screen.

11. From the **Summary** screen, click **Add** to finalize the new user. **DO NOT SWITCH TO THE NEW USER.** Please continue to perform the following steps as the **admin** user.

Configure the governance console

In this section, you will enable the watsonx.governance console (OpenPages) integration with Factsheets and the watsonx.governance monitoring service (OpenScale), and load sample data into the governance console.

1. Create a model inventory

First, you will create an inventory and give the created user access to it. Inventories are collections of model use cases. They are meant to be collaborative so that multiple people that perform different roles can contribute to governance of key assets.

1. Click on the **hamburger menu** in the upper left to open the menu panel.
2. Click on the **AI governance** menu item to expand it.
3. Click on the **AI use cases** menu item.

Name	Email	Previous Session	User ID	Roles
complianceofficer	complianceofficer@ibm.com	—	1000331004	Administrator + 7 more
—	--	—	1000330999	Administrator

4. Click on the **gear icon** to open the **AI use case settings** screen.

Name	Status	Owner	Inventory	Tags	Risk level	Alerts in

5. Click the **Inventories** menu item on the left.
6. Click the blue **New inventory** button to create a new inventory.

The screenshot shows the 'Inventories' page. At the top, there's a navigation bar with 'General', 'Report templates', and 'Attachments'. Below it is a search bar with 'Find an inventory' placeholder text. A prominent blue button labeled 'New inventory' with a circled number 6 is located at the top right. The main area displays a table with columns 'Name', 'Date created', 'Creator', and 'Your role'. A message 'No inventory available' with a small icon is centered. At the bottom, there's a 'New inventory' button.

7. Enter a name for your inventory like **High Oaks Banks Model Use Cases** in the **Name** field.
8. Ensure that the **Add collaborators after creation** box is checked.

The screenshot shows the 'New Inventory' dialog. It has fields for 'Name' (containing 'High Oaks Banks Model Use Cases' with a circled number 7) and 'Description (optional)'. Below these is a 'Description text' area with placeholder text. At the bottom, there's a checked checkbox labeled 'Add collaborators after creation' (with a circled number 8) and a note: 'Inventory without collaborators will be visible to only you. Add members to collaborate on AI use cases.'

9. Click the **Create** button to create the inventory. The **Set collaborators** window opens.
10. Click the blue **Add collaborators** button to open the context dropdown.
11. Click on the **Add user** menu item. The **Add collaborators** window opens.

The screenshot shows the 'Set collaborators' dialog for 'High Oaks Banks Model Use Cases'. It lists a single collaborator named 'admin' with a role of 'Admin'. A context menu is open over the 'Add user group' option, with 'Add user' highlighted and a circled number 11.

<input type="checkbox"/>	Name	Email	Role	Date added
<input type="checkbox"/>	AD admin	--	Admin	58 seconds ago

12. In the **Search users** field, begin typing user ID you created in the previous section, and select the user from the search results.

- Click the **Add** button to add the user as an administrator to the inventory.

You can close the **Set collaborators** and **Manage** windows to return to the **AI use case** screen, then return to the Cloud Pak for Data home page by clicking the title in the upper left corner. You have now created an inventory to hold your AI use cases. Next, you will turn on integration with the IBM OpenPages service, which will enable the watsonx governance console.

2. Turn on OpenPages integration

The environment you are using for this lab has the watsonx.governance console (OpenPages) service installed. To connect that service to the inventory you created in a previous step so that it can be managed in the governance console, you will need to turn on the integration.

- From the home screen, click the **hamburger menu** in the upper left.
- Click on the **AI governance** menu entry to expand it.
- Click on **External models**. The **External models** screen appears.

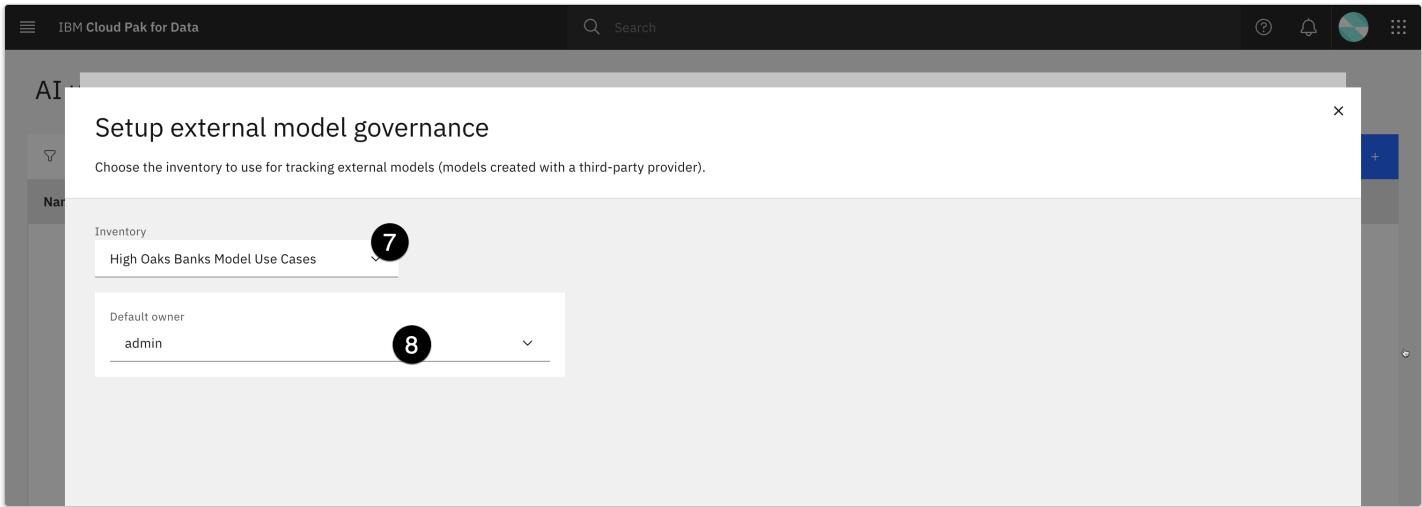
The screenshot shows the main interface of IBM Cloud Pak for Data. On the left, there's a navigation sidebar with various sections like Home, Data, Projects, Catalogs, AI governance, Deployments, and Services. The 'AI governance' section is expanded, showing 'AI use cases' and 'External models'. The 'External models' item is highlighted with a circled number '3'. The main content area features a dark background with a 3D cube visualization and text about managing users and staying informed. At the bottom, there are three tabs: 'Identity and user access', 'Requests', and 'Deployment spaces'. The date 'Mar 10, 2024' is visible at the bottom right.

- Click the blue **Setup external model governance** button.

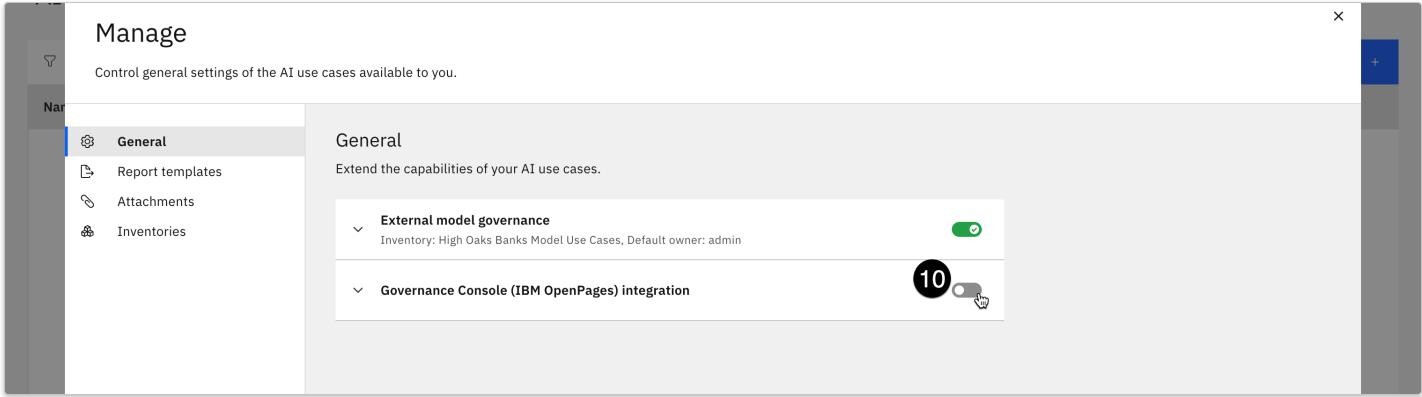
This screenshot shows the 'External models' configuration screen. It features a large padlock icon and the text 'External model governance not active'. Below this, it says 'Activate external model governance to add external models for AI governance. You can then track these models in your AI use cases.' A prominent blue button labeled 'Setup external model governance' is centered, with a circled number '4' indicating the next step. The top of the screen includes the standard navigation and search bar.

- Click the toggle button for **External model governance** to activate it. The **Setup external model governance** screen opens.

This screenshot shows the 'General' configuration screen under the 'Name' tab. The left sidebar lists 'General', 'Report templates', 'Attachments', and 'Inventories'. The main panel displays the 'General' section with the sub-section 'External model governance' expanded. A toggle switch for 'External model governance' is shown in the 'on' position, with a circled number '5' indicating the step. Another toggle switch for 'IBM OpenPages integration' is also visible.



9. Click **Apply**. You will return to the previous screen.
10. Click the toggle button for **Governance Console (IBM OpenPages) integration** to activate it. The **Setup Governance Console integration** screen opens.



11. Verify that the **User** dropdown is set to **admin**.
12. Click on the **Inventory** dropdown and select the **High Oaks Banks Model Use Cases** inventory you created in the previous step.
13. Click on the **Default owner** dropdown and select the **admin** user.



14. Click on the **Apply** button to complete the setup.

Integration between watsonx (or Cloud Pak for Data) and OpenPages has now been enabled. Now that you have configured Cloud Pak for Data to use the watsonx governance console (OpenPages), model use cases created in the governance console will appear in the inventory in Cloud Pak for Data, and vice versa.

3. Add the created user to the governance console

In a previous section, you created a user in Cloud Pak for Data that represented a compliance officer for the organization. In this step, you will give that user access to the governance console.

Note: In this environment, new users **must** be created in Cloud Pak for Data and then given access to the governance console using the method described below. You cannot create new users in OpenPages, as they will not be able to log in and use the service.

1. Return to the Cloud Pak for Data home page.
2. Click on the **hamburger menu** in the upper left.
3. Click on the **Services** item from the menu to expand it.
4. Click on **Instances** to open the **Instances** screen.

5. Locate the instance of OpenPages in the table and click on the three vertical dots in the far right column.
6. Click on **Manage access**. The access management page for the OpenPages service opens.

Name	Type	Created by	vCPU requests	Memory requests (GiB)	Users	Status	Created on
cpd-database Service instance for db2oltp-1715...	db2oltp	admin	2.20	5.75 Gi	1	Green	May 7, 2024
openscale-defaultinstance IBM Watson OpenScale	aios	admin	0.00	0.00 Gi	1	Green	May 2, 2024
openpagesinstance-cr OpenPages Instance	openpages	admin	6.45	20.40 Gi	1	Green	May 2, 2024

7. Click on the **Add users** button. The **Grant access to users and user groups** window opens.
8. Check the box to the left of the created user.

Grant access to users and user groups
Specify the users who can access OpenPages and the role of each user.

Find users and user groups

Users and user groups Filter by: All

Add users +

Name admin admin, --

EM Eric Martens complianceofficer, complianceofficer@ibm.com

Choose a role Admin

OpenPagesUser Admin

8 9

- Click **Add** to add the user access to the service.

Note: The user will be added to the list of users in the governance console service automatically by the system; however, it could take up to 20 minutes for the job to run, so the created user may not be immediately available in the OpenPages console.

4. Launch the governance console

In this section, you will launch the OpenPages service.

Note: With the release of watsonx.governance, IBM's AI governance solutions continue to be integrated and re-branded into a cohesive whole. However, previous versions of the service names may still appear in some locations, and your clients may be familiar with these separate services. In the context of watsonx.governance, the OpenPages product is frequently referred to as the **governance console**, but in the list of services running in your environment, is referred to as **OpenPages**.

- Close the **Manage** window by clicking the X button in the upper right.
- Click on the **hamburger menu** in the upper left.
- Click on the **Services** item from the menu to expand it.
- Click on **Instances** to open the **Instances** screen.

IBM Cloud Pak for Data

Filter navigation

Home Data Platform connections Databases Projects Catalogs AI governance Deployments Services Instances Administration Support

2 3 4

Manage users Stay informed

Identity and user access Deployment spaces Alerts

Logged in users 0

openscale-express-path-preprod-00000000-0000-00.. Mar 10, 2024 9:55 PM

No alerts to display. When data is available, you'll see it here.

- Locate the instance of OpenPages in the table and click on the three vertical dots in the far right column.
- Click on **Manage access**. The access management page for the OpenPages service opens.

The screenshot shows the IBM Cloud Instances screen. It lists three service instances: cpd-database, openscale-defaultinstance, and openpagesinstance-cr. The openpagesinstance-cr instance is selected. A context menu is open next to it, with item 6, "Manage access", highlighted.

7. Click on the **Add users** button. The **Grant access to users and user groups** window opens.
8. Check the box to the left of the created user.
9. Click on the **Choose a role** dropdown to the right of the created user and select **OpenPagesUser**.

The screenshot shows the "Grant access to users and user groups" window. It lists users and user groups. Item 8 highlights the user "admin". Item 9 highlights the "Choose a role" dropdown menu, which is open to "OpenPagesUser".

10. Click **Add** to add the user access to the service.

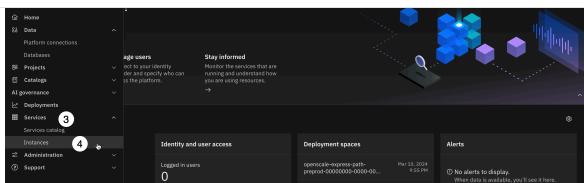
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1. Close the **Manage** window by clicking the **X** button in the upper right.
2. Click on the **hamburger menu** in the upper left.
3. Click on the **Services** item from the menu to expand it.
4. Click on **Instances** to open the **Instances** screen.



5. Locate the instance of OpenPages in the table and click on the link in the **Name** column to open the instance details screen.

Name	Type	Created by	vCPU requests	Memory requests (GiB)	Users	Status	Created on
openpagesinstance-cr	openpages	cpadmin	3.22	14.20 Gi	1	Green	Mar 8, 2024
openscale-defaultinstance IBM Watson OpenScale	aios	admin	0.00	0.00 Gi	2	Green	Mar 8, 2024
ca-metastore Service instance for db2oltp-17098521597...	db2oltp	cpadmin	0.60	4.25 Gi	1	Green	Mar 7, 2024

6. Scroll down to the **Access information** section, and click the **launch icon** to launch the service.

Status	Running		
Database configuration			
Access information	Database type	Internal database	
URL	https://cpd-cpd.apps.ocp-110000b3qc-p09m.cloud.techzone.ibm.com/	Launch OpenPages	Use dedicated nodes
			False
Size	Data storage class	ocs-storagecluster-ceph-rbd	

The OpenPages service launches. Close any **Welcome** popup windows and proceed.

6. Load sample users

In this step, you will load sample user data to more fully flesh out the organization. In the hands-on lab, you will work with the user you created in the previous step to see how accounts can be customized and given roles in the organization.

For this exercise, you will be loading data and metrics relevant to the hands-on lab, but note that the ability to import and export these configurations allows for rapid customization and sharing of OpenPages environments, workflows, and data.

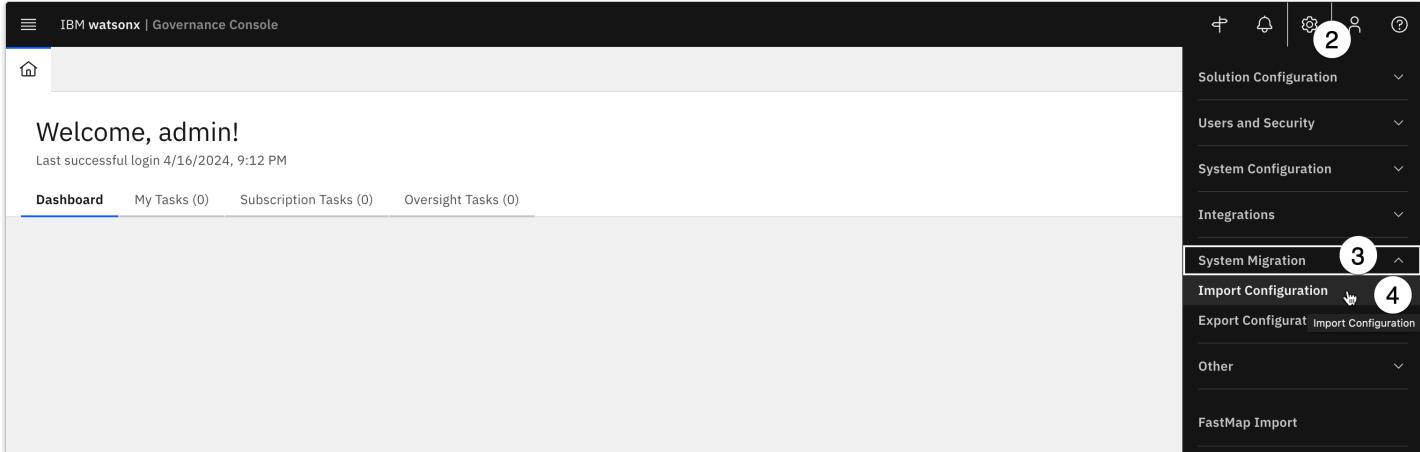
There are two different import methods for the governance console:

- Configuration imports, which consist of XML files
- FastMap imports, which consist of Excel spreadsheets (xlsx)

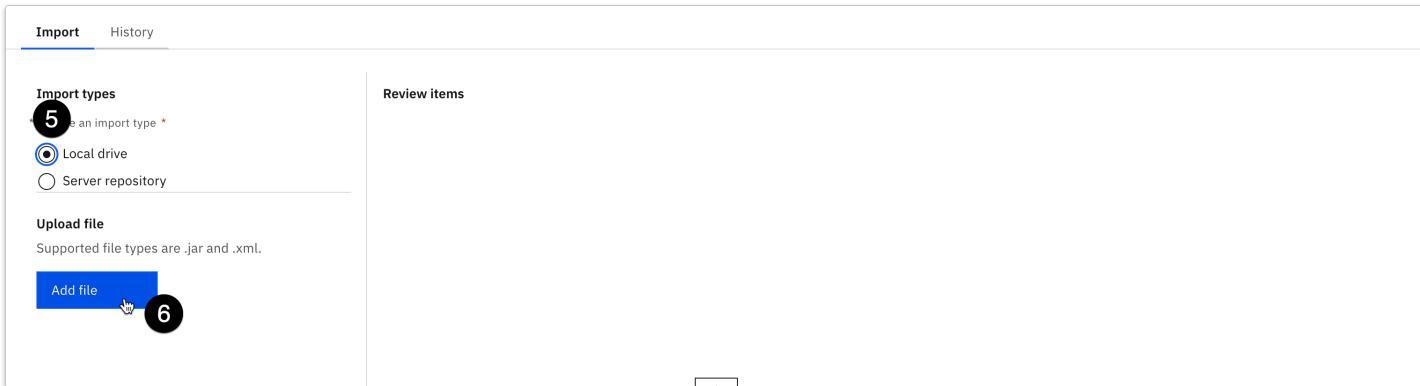
Both methods can be used to import user and organizational data, questionnaires, previous model metrics, and more.

created within the governance console, or uploaded to the console via configuration imports will not be able to log in to the service. The example users below are being loaded for the sole purpose of filling out the governance console to make it appear more realistic, and because the organizational data being uploaded in a later step references some of the example user accounts.

1. Right-click on the link and download the **MRG-users-op-config.xml** file to your machine.
2. Click the **gear icon** in the upper right to open the **Administration menu**.
3. Click the **System Migration** menu item to expand it.
4. Click on **Import Configuration**. The **Import Configuration** tab opens.



5. From the column on the left, click the radio button to select **Local drive**.
6. Click **Add file**.



7. In the file browser, navigate to the **MRG-users-op-config.xml** file on your machine and open it.
8. Click **Import**.

System Migration

Import Configuration

Import History

Import types

* Choose an import type *

Local drive
 Server repository

Upload file

Supported file types are .jar and .xml.

[Add file](#)

Review items

MRG-users-op-config.xml

Package information

Description

Modified 4/18/2024, 22:06:10

Groups/Users (8)

Validate Import

8

- Click **Submit** to confirm your choice and import the file. Your browser will open the **History** tab to show the progress of the import. The file import may take a minute or two to complete; when it is finished, you will receive an **Import successful** notification.

7. Load sample organization and metrics data

In this section, you will load additional data to flesh out the organization and the dashboard using the FastMap import tool. This data includes organizational structures such as departments, as well as model use cases

! Do not attempt to continue loading the data until the previous step has completed.

- Right-click the link and download the [High_Oaks_All_MRГ_Content.xlsx](#) file to your machine.
- Click on the **gear icon** in the upper right to open the Administration view.
- Click on the **FastMap Import** menu item.

IBM Watsonx | Governance Console

Business Ent...

Business Entities (14)

Name	Description	Executive Owner	Risk Appetite	In Scope	In R...
Catalogs	Library > MRГ > WKC > Catalogs			No	
DPM	Library > DPM			No	
DPMLibrary	Library > DPM > DPMLibrary			No	

Solution Configuration

Users and Security

System Configuration

Integrations

System Migration

Other

FastMap Import

FastMap Import

System Admin Mode: Disabled

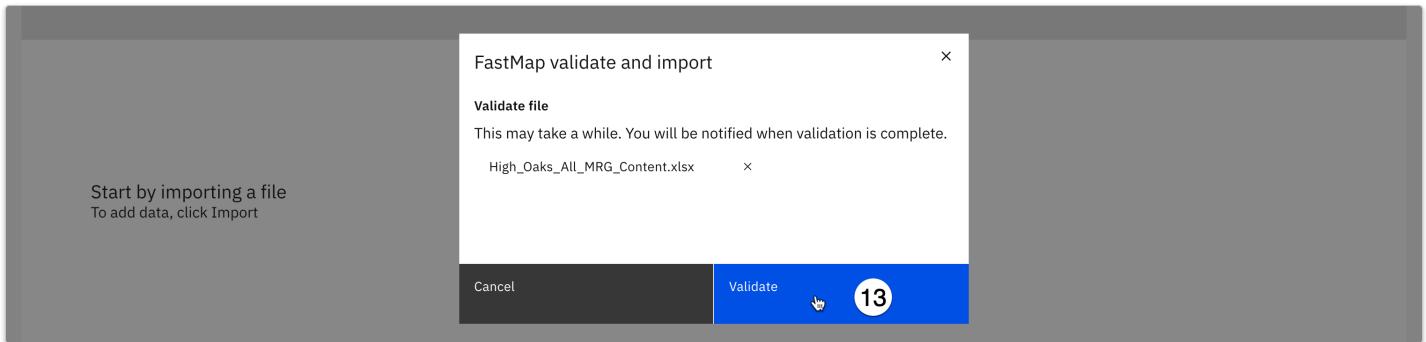
Enable System Admin Mode

2

3

- Click the **Import** button. The **FastMap validate and import** window opens.

5. Click the **Choose file** button. Locate the *High_Oaks_All_MRGS_Content.xlsx* file on your machine's hard drive.
6. Click **Validate**. The validation process should take up to a minute to complete.



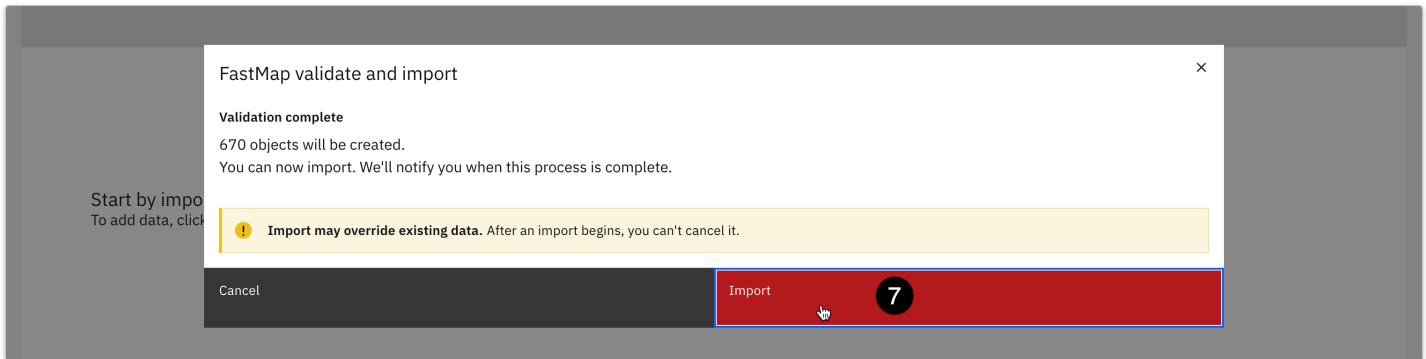
Note: If the validation process fails with an **Invalid user** error as shown in the screen below, please see the *Invalid users when importing the FastMap file* item in the [Troubleshooting](#) section below.

The screenshot shows a modal window titled "FastMap validation complete with errors". It contains a message: "Review the following information and upload a corrected file." Below is a "Choose file" button. A table titled "Validation Messages (High_Oaks_All_MRGS_Content.xlsx)" lists two errors:

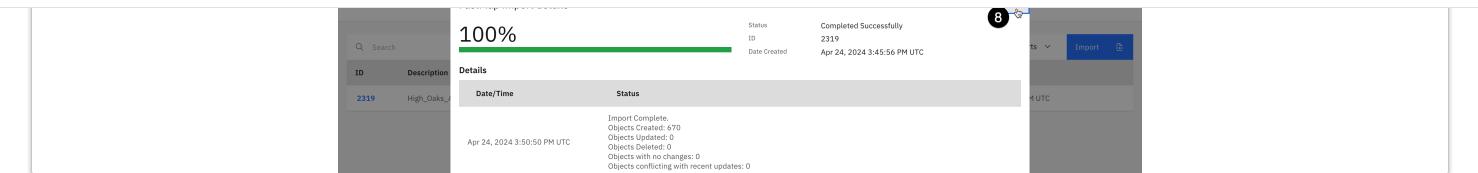
Type	Description	Sheet	Row	Column Index	Column Header
Error	Invalid user. (ModelDeveloper)	Models	2	AC	Developer
Error	Invalid user. (ModelManager)	Models	2	AO	Assessor

At the bottom are three buttons: "Close", "Cancel", and "Validate".

7. After the validation completes, click **Import** to confirm the import. The screen shows the status of the import, which will take a few minutes to complete. While the items are importing, you can continue to the next step, and the import will run in the background. You will be notified when it is complete.



8. After the import completes, close the status screen by clicking the X icon in the upper right of the window.



You have successfully imported details and metrics for the organization.

8. Enable the watsonx profiles for the admin user

Finally, for the governance console to show the new watsonx views and functionality for the admin user, you will need to add the relevant profiles to the user account and switch to one of them.

1. Click on the **gear icon** in the upper right to open the **Administration menu**.
2. Click on the **Users and Security** menu item to expand it.
3. Click on the **Users** menu item. The **Users** tab opens.

4. Locate the **admin** user from the list and click on it.
5. Scroll down to the **Locale and Profiles** section and click on the **pencil** icon next to **Allowed user profiles**.

6. Enter **watsonx** in the text entry to narrow the list down, then check the boxes for the **watsonx-governance Modules Master**, **watsonx-governance MRG Master**, **watsonx-governance ORM Master**, and **watsonx-governance RCM Master** profiles.

i Note that the **Save** button is disabled; this is because not all the required information is present for this user, so the system prevents changes from being saved. Required fields are denoted with a red asterisk.

7. Scroll up to the **User Information** section and enter an email address such as admin@ibm.com in the **Email** field. The **Save** button becomes operational.
8. Click the **Save** button to save your changes.

The screenshot shows the 'User Information' section of the IBM Watsonx Governance console. On the left, there's a sidebar with 'User Information', 'Reset Password', 'Force Password Change', 'Locale and Profiles', 'Access Information', 'Group Memberships', 'Role Assignments', 'Reports Access', and 'Copy Access From'. The main area shows 'User Information' with fields for 'User Name *' (admin), 'Email *' (admin@ibm.com, highlighted with a blue box and circled with a number 7), 'First Name' (admin), and 'Last Name'. At the top right are 'Cancel' and 'Save' buttons, with 'Save' being highlighted and circled with a number 8.

Now that you have enabled the watsonx profiles for the admin user, you will need to switch to the new profile.

9. Click on the **avatar icon** in the upper right to open the **User menu**.
10. Click on the **Change Profile** menu item. The **Select profile** dialog opens.

The screenshot shows the 'User menu' (indicated by a circled number 9) which includes options like '+' (Create), 'Bell', 'Globe', 'User', and '?'. Below it, a dropdown menu for 'Change Locale' is open, showing 'U.S. English' and 'Change Locale'. Further down, the 'OpenPages Modules Master' section is visible with 'Change Profile' (circled with a number 10), 'Carbon Gray 10', and 'Change Theme'.

11. Locate the **watsonx-governance Modules Master** profile from the list and click on it.
12. Click the **Save** button to save your changes.

9. Add views to the MRG role template

At the time of writing, the Model Risk Governance role template does not have access to the **Risk** or **Use Case Review** views. You will need to manually add the view to the role template. Future versions of the governance console may change the role to automatically include access to these views.

1. Click on the **gear icon** in the upper right to open the **Administration menu**.
2. Click on the **Users and Security** menu item to expand it.
3. Click on the **Role Templates** menu item. The **Role Templates** tab opens.

Role Templates

Name	Purpose	Description	Owner	Status
Agency Based LGD Estimation	High Oaks Bank > North America > Corporate Banking	Uses internal and external recovery data, adjusted for macro-economic impact. Uses statistical regression	Bob Eldridge	Approved for Development

4. From the list in the left panel, scroll down to the **MRG - All Permissions** role and click on it.
5. In the panel on the right, in the **Role Access Controls** section, click on the **Add** button. The **Add Object Type Access** panel opens.

Role Templates

Name	Read	Write	Delete	Associate
Action Item	Granted	Granted	Granted	Granted
Business Entity	Granted	Granted	Granted	Granted

6. Scroll to the **Risk Assessment** item in the **Add Object Type Access** panel and check the box next to it, as well as the boxes next to **Risk Assessment Eval** and **Risk Eval**.

- Click the **Add** button at the bottom of the panel to add access. Note that you have only added **Read** level access at this point. The **Add Object Type Access** panel closes, and **Risk Assessment** as well as the other objects now appear in the main access list.
- Scroll to the **Risk Assessment** item in the list and check the box to the left of it, as well as the boxes next to **Risk Assessment Eval** and **Risk Eval**.

The screenshot shows the 'Role Templates (41)' page under 'Users and Security'. On the left, a sidebar lists various role templates. In the main area, a table titled 'Role Access Controls' shows access levels for different objects. The 'Risk' object has four access levels: Granted, Granted, Granted, and Granted. The 'Risk Assessment' object has four access levels: Granted, Unspecified, Unspecified, and Unspecified. The 'Risk Assessment Eval' object has four access levels: Granted, Unspecified, Unspecified, and Unspecified. The 'Risk Eval' object has four access levels: Granted, Unspecified, Unspecified, and Unspecified. The 'Section Template' and 'Signature' objects both have four access levels: Granted, Granted, Granted, and Granted. A red box highlights the 'Risk Assessment', 'Risk Assessment Eval', and 'Risk Eval' rows, and a black circle labeled '8' is placed over the first row. The 'Risk' object row is also highlighted with a red border.

- Scroll back to the top of the list and click the **Edit** button in the context menu at the top of the table. The **Edit** panel opens.

The screenshot shows the 'Role Templates (41)' page under 'Users and Security'. The 'Edit' panel for 'Role Access Controls (37)' is open. It shows a table with one item selected, 'Action Item'. The table has columns for Name, Read, Write, Delete, and Associate. The 'Read' column for 'Action Item' is 'Granted', while 'Write', 'Delete', and 'Associate' are 'Granted'. A black circle labeled '9' is placed over the 'Edit' button in the top right corner of the panel.

- Use the dropdowns to set the **Write**, **Delete**, and **Associate** permissions to **Granted**.

The screenshot shows the 'Role Templates (41)' page under 'Users and Security'. The 'Edit' panel for 'Role Access Controls (43)' is open. It shows a table with three items selected, 'Action Item', 'Business Entity', and 'Challenge'. The table has columns for Name, Read, Write, Delete, and Associate. The 'Write' column for 'Action Item' is 'Granted', while 'Delete' and 'Associate' are 'Granted'. The 'Write' column for 'Business Entity' is 'Granted', while 'Delete' and 'Associate' are 'Granted'. The 'Write' column for 'Challenge' is 'Granted', while 'Delete' and 'Associate' are 'Granted'. A red box highlights the 'Write', 'Delete', and 'Associate' fields for the 'Action Item' row, and a black circle labeled '10' is placed over the 'Associate' field. The 'Associate' field for 'Action Item' is also highlighted with a red border.

- Click the **Done** button to close the **Edit** panel.

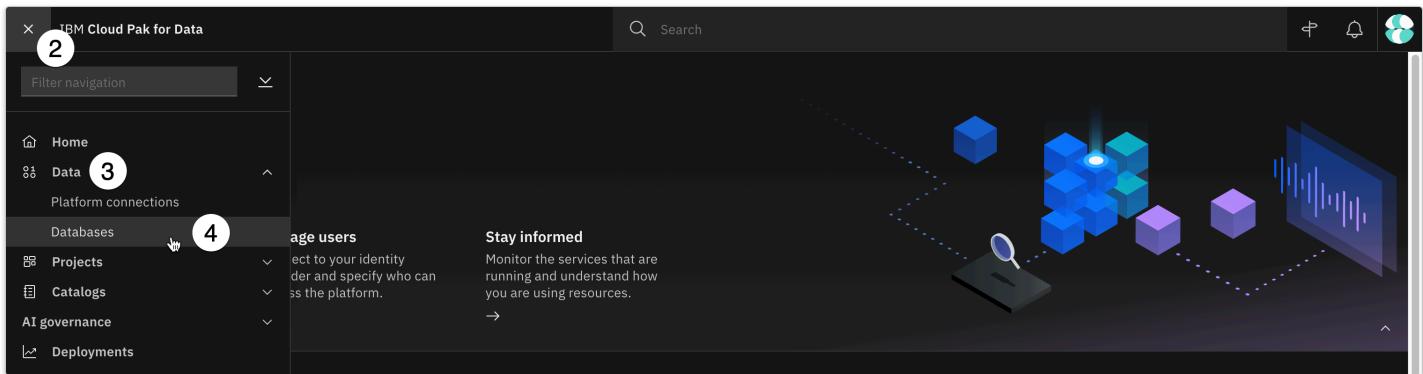
You have completed configurations for the governance console.

In this step, you will configure the watsonx.governance monitoring service, formerly known as OpenScale. The monitoring service provides metrics by capturing model input and output in a database known as a datamart. The datamart also holds information about the models being monitored, as well as the complete history of the metrics gathered.

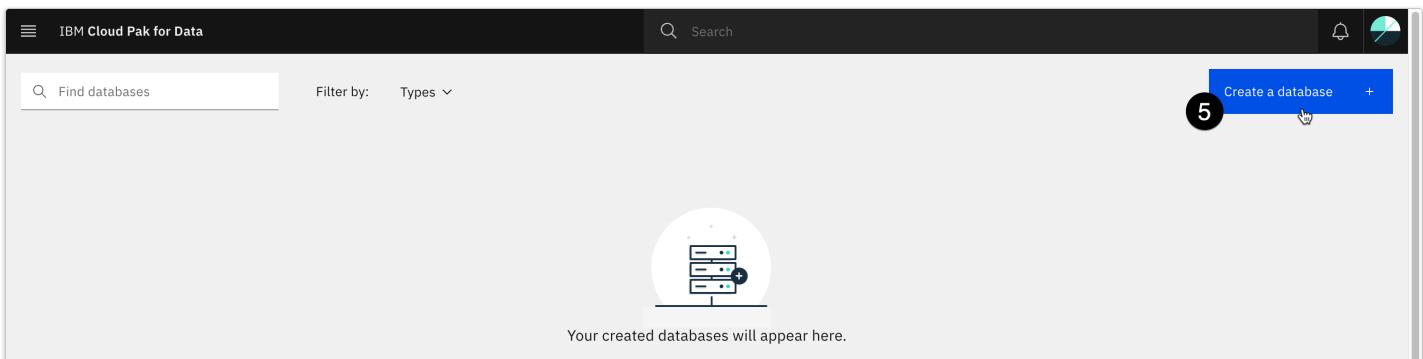
The datamart requires either a Db2 or PostgreSQL database.

1. Create a database

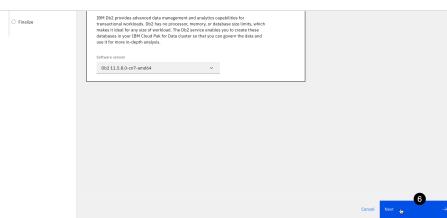
1. Log in to Cloud Pak for Data as the *admin* user in your environment, using the Cloud Pak for Data Console Route and password gathered in the *Get your Cloud Pak for Data credentials* step of the **Environments** section.
2. From the home screen, click the **hamburger menu** in the upper left to open it.
3. Click the **Data** menu item.
4. Click on **Databases**.



5. Click the **Create a database** button.



6. Verify that the **Db2** tile is selected as the database type, with the most recent software version selected in the dropdown. Click **Next** to continue.



7. Scroll down to the **Storage structure** section of the configuration screen and click on **Single location for all data**.

8. Click **Next** to continue.

9. Leave the settings on the **Advanced configuration** screen unchanged and click **Next** to continue.

10. On the **Credentials** screen, use the **Input method** dropdown to select **Generate a Kubernetes secret** and click **Next** to continue.

11. On the **Storage** screen, use the **Storage class** dropdown to select the **ocs-storagecluster-cephfs** option.

12. Set the **Size** to **50 GiB** and click **Next** to continue.

13. On the **Finalize** screen, you can safely ignore the warning message. Set the **Display name** to **cpd-database** and click **Create**.

The database will take roughly 30 minutes to create. When it is finished, you can proceed to the next step.

2. Gather database credentials

The watsonx.governance service will need to connect to the database you created in order to create and update the datamart. In this step, you will gather the credentials necessary for that connection.

1. From your list of databases, locate the tile for the newly-created database and click the three dots in the upper right of the tile to open the context menu.
2. Click **Details**.

3. Locate the **Deployment id** in the details towards the bottom of the page. Select and copy the value into a text editor.

About this database		Storage	
Database name	BLUDB	Storage class (Storage)	ocs-storagecluster-cephfs
Database type	db2oltp	Size (Storage)	50 GiB
Access information			
Processor	x86-64	JDBC Connection URL	<code>jdbc:db2://<CLUSTER_ACCESSIBLE_IP>:32123/BLUDB:user=admin;password=<password>;securityMechanism=9;encryptionAlgorithm=2;</code>
Deployment id	db2oltp-1711746733422797	JDBC Connection URL (SSL)	<code>jdbc:db2://<CLUSTER_ACCESSIBLE_IP>:30854/BLUDB:user=admin;password=<password>;securityMechanism=9;sslConnection=true;encryptionAlgorithm=2;</code>
Created on	Mar 29, 2024 3:12 PM	Download SSL Certificate	
Status	Available		

4. In the text editor, add a prefix of **c-** and a suffix of **-db2u** to the deployment ID value from the previous step to create the database host name. For example, in the screenshot below, the database has a deployment ID of **db2oltp-1711746733422797**. The corresponding host name would be **c-db2oltp-1711746733422797-db2u**.
5. In the text editor, add a prefix of **c-** and a suffix of **-db2u** to the deployment ID value from the previous step to create the database host name. For example, in the screenshot below, the database has a deployment ID of **db2oltp-1711746733422797**. The corresponding host name would be **c-db2oltp-1711746733422797-db2u**.
6. Click on the **IBM Cloud Pak for Data** button in the upper left to return to the home screen.

TechZone now offers limited access to deployed models on Amazon SageMaker, including a hiring model used in this hands-on lab.

1. Reserve an [AWS SageMaker/Bedrock](#) instance in TechZone. Note that TechZone restrictions on the number of reservations per account may prevent you from creating this reservation using the **Education** category. You should be able to use the **Test** category to create an additional reservation.
2. When your reservation is complete, you will receive an email. Click on the tile for the reservation from your [TechZone reservations page](#). The reservation information screen opens.
3. Scroll down to the **Environment** section. Copy and past the values for **Region**, **AWS_ACCESS_KEY_ID** and **AWS_SECRET_KEY_ID** into a text file for later use in the lab.

Cloud Account
ITZ

Region
us-west-1

Geo
Datacenter

Customer data
false

Environment

Idle runtime limit
10800

Timeout action

AWS_ACCESS_KEY_ID
AKIA4MTWG6TWGVEFZGWJ

AWS_SECRET_ACCESS_KEY

.....

COPY

Copy to clipboard

AWS Access Group
851725186284-AIModelValidatorUsers

AWS SSO User portal URL
<https://techzone.awsapps.com/start>

IBM Cloud Pak for Data

Filter navigation

Home

Data

Platform connections

Databases

Projects

Catalogs

AI governance

Deployments

Services

Instances

Administration

Support

2

4

age users

Stay informed

Identity and user access

Deployment spaces

Alerts

0

openscale-express-path-preprod-00000000-0000-00..

Mar 10, 2024 9:55 PM

No alerts to display.
When data is available, you'll see it here.

As part of the hands-on lab, you will govern an OpenAI model deployed on Microsoft Azure.

1. Reserve an [Azure OpenAI](#) instance in TechZone. Note that TechZone restrictions on the number of reservations per account may prevent you from creating this reservation using the **Education** category. You should be able to use the **Test** category to create an additional reservation.

3. Scroll down to the **Environment** section of the reservation screen. You will need to copy several of the values in this section to a text file for use in a Jupyter notebook.
4. Locate **The API endpoint for the deployed model** link. Copy the URL into your text file. It will be the **AZURE_OPENAI_ENDPOINT** value in the Jupyter notebook.
5. Locate **The name of the deployed model** value and copy it to your text file. It will be the **AZURE_OPENAI_DEPLOYMENT_NAME** value in the Jupyter notebook.

Access management: openscale

Grant access to users and user groups

Specify the users who can access Watson OpenScale and the role of each user.

Filter by: All roles

Find users

Name admin

admin, --

EM Eric Martens complianceofficer, complianceofficer@ibm.com

Choose a role

- Editor
- Viewer
- Admin**

7. Locate **The Client Secret of the Service Principal** value and click the **Copy** button to copy it to your text file. It will be the **AZURE_CLIENT_SECRET** value in the Jupyter notebook.
8. Locate **The Azure AD tenant ID** value and copy it to your text file. It will be the **AZURE_TENANT_ID** value in the Jupyter notebook.

4. Configure the monitoring service

You have created a database and added a user to the monitoring service. You are now ready to connect the database to the watsonx.governance monitoring service.

1. Click on the **hamburger menu** in the upper left of the screen.
2. Click on the **Services** menu item to expand it.
3. Click on **Instances** from the menu.

IBM Cloud Pak for Data

1 Filter navigation

2 Services

3 Instances

Manage users

Stay informed

Alerts

No alerts to display.

Recent projects

No recent projects

Requests

No data available

4. Locate the **IBM Watson OpenScale** instance from the list. Note that, on IBM Cloud, this service has been renamed to watsonx.governance. Future software releases will likely incorporate this change as well, so this screen may change to reflect the new name.
5. Click on the ellipsis button for the OpenScale instance on the far right to open the context menu.
6. Click on **Open**. The watsonx.governance monitoring service (OpenScale) will open. Note that if the **Open** option does not appear, the page may not have finished fully loading. Try waiting for up to a minute or refreshing the page.

Filter by: Type ▾ Status ▾

Q Find instances

Name	Type	Created by	vCPU requests	Memory requests (GiB)	Users	Status	Created on
cpd-database Service instance for db2oltp-17117467334...	db2oltp	admin	2.20	5.75 Gi	1	Green	Mar 29, 2024
openpagesinstance-cr OpenPages Instance	openpages	admin	3.22	14.20 Gi	1	Green	Mar 28, 2024
openscale-defaultinstance IBM Watson OpenScale	aios	admin	0.00	0.00 Gi	1	Green	Mar 28, 2024

4 5 6 7 8

7. If this is the first time you have opened the watsonx.governance monitoring tool, you will see the **Model evaluation** modal window. Click **Manual setup**. Note that you can do an auto setup using the same credentials and database information as the steps below to fill out the dashboard with some example models, but the process will take up to 20 minutes longer.

Filter by Tags ▾ Alert type ▾ Machine learning ▾

Q Which deployment are you looking for?

Sort by Severity ▾

Model evaluation

80% Complete

Configuration Lab

Increase AI model transparency by explaining model transactions

To get up-and-running, we'll set up a machine learning provider, database, and sample models for you. The process will take around 30 minutes. Ready to go?

Manual setup 7 Auto setup

8. From the **System setup** screen, click the **Pencil icon** on the **Database** tile to edit database information.

IBM watsonx Need help? ⓘ AA

System setup

Connect to a database, machine learning providers, and integrated services. Optionally enable batch support.

Required

- Database
- Machine learning providers
- Users & roles

Optional

- Metric groups
- Metric endpoints

Database

Description

For online and batch deployments the database stores model evaluation results. For online deployments, the database also stores model transactions. Model transactions for batch deployments are stored outside the database (see Batch support settings).

Database

Click the pencil icon to configure database.

8

9. Use the dropdown to set the **Database type** to **Db2**.
10. Paste the database host name value you constructed in the previous section into the **Hostname or IP address** field.

11. Enter **BLUDB** in the **Database** field.
12. Enter **admin** in the **Username** field.
13. Enter the Cloud Pak for Data admin password in the **Password** field.
14. Click **Connect**. The monitoring service will attempt to connect to the database using the credentials you supplied. If the connection fails, double-check that you have constructed the hostname correctly, and that you are using the **admin** username and password that you use to log into the Cloud Pak for Data or watsonx home screen.

15. Use the dropdown to set **Schema** to **Auto-create a new schema**.
16. Click **Save**.

When the changes have successfully saved, the watsonx.governance monitoring service will be configured and operational.

External Credentials

1. Getting Amazon SageMaker credentials

TechZone now offers limited access to deployed models on Amazon SageMaker, including a hiring model used in this hands-on lab.

1. Reserve an [AWS SageMaker/Bedrock](#) instance in TechZone. Note that TechZone restrictions on the number of reservations per account may prevent you from creating this reservation using the **Education** category. You should be able to use the **Test** category to create an additional reservation.
2. When your reservation is complete, you will receive an email. Click on the tile for the reservation from your [TechZone reservations page](#). The reservation information screen opens.
3. Scroll down to the **Environment** section. Copy and past the values for **Region**, **AWS_ACCESS_KEY_ID** and **AWS_SECRET_KEY_ID** into a text file for later use in the lab.

ITZ

Region us-west-1	Datacenter
Customer data false	Environment
Idle runtime limit 10800	Timeout action

3

AWS_ACCESS_KEY_ID
AKIA4MTWG6TWGVEFZGWJ

AWS_SECRET_ACCESS_KEY
.....

AWS Access Group
851725186284-AIModelValidatorUsers

AWS SSO User portal URL
<https://techzone.awsapps.com/start>

Copy to clipboard

2. Getting Microsoft Azure credentials

As part of the hands-on lab, you will govern an OpenAI model deployed on Microsoft Azure.

- Reserve an [Azure OpenAI](#) instance in TechZone. Note that TechZone restrictions on the number of reservations per account may prevent you from creating this reservation using the **Education** category. You should be able to use the **Test** category to create an additional reservation.
- When your reservation is complete, you will receive an email. Click on the tile for the reservation from your [TechZone reservations page](#). The reservation information screen opens.
- Scroll down to the **Environment** section of the reservation screen. You will need to copy several of the values in this section to a text file for use in a Jupyter notebook.
- Locate [The API endpoint for the deployed model](#) link. Copy the URL into your text file. It will be the **AZURE_OPENAI_ENDPOINT** value in the Jupyter notebook.
- Locate [The name of the deployed model](#) value and copy it to your text file. It will be the **AZURE_OPENAI_DEPLOYMENT_NAME** value in the Jupyter notebook.
- Locate [The Client ID \(Application ID\) of the Service Principal](#) value and copy it to your text file. It will be the **AZURE_CLIENT_ID** value in the Jupyter notebook.
- Locate [The Client Secret of the Service Principal](#) value and click the **Copy** button to copy it to your text file. It will be the **AZURE_CLIENT_SECRET** value in the Jupyter notebook.
- Locate [The Azure AD tenant ID](#) value and copy it to your text file. It will be the **AZURE_TENANT_ID** value in the Jupyter notebook.

Reservation Details

The role type assigned to the user.
Regular

The API endpoint for the deployed model.
<https://azureml-openai-americas-1.openai.azure.com/>

4

The API version for the deployed model.
2024-02-01

The name of the deployed model.
tz-gpt-35-turbo-americas-1

5

The resource group name for the selected region.
rg-azureml-openai-americas-1

The selected region for deployment.
eastus2

The Client ID (Application ID) of the Service Principal.
f74b4c72-8889-46e1-9053-89fb6d99c43c

6

The Client Secret of the Service Principal.

Your privacy choices **7**

The display name of the Service Principal.
sp-azureml-openai-emartens@us.ibm.com

The subscription ID.
ec2cec7d-2d92-4b11-8acb-267d7e41233d

The name of the Azure subscription.
azure-ml-openai

The Azure AD tenant ID.
4e7730a0-17bb-4dfa-8dad-7c54d3e761b7

8

You may now proceed to the [watsonx.governance Level 4 PoX hands-on lab](#). Note your Cloud Pak for Data console URL and login credentials, which will be used in that lab.

Deploy a watsonx.ai model (optional)

i Note: The current version of the lab uses a detached prompt template for an Azure OpenAI model, and does not make use of a watsonx foundation model. These instructions are maintained for those who wish to evaluate foundation models, and may be used in future versions of the lab.

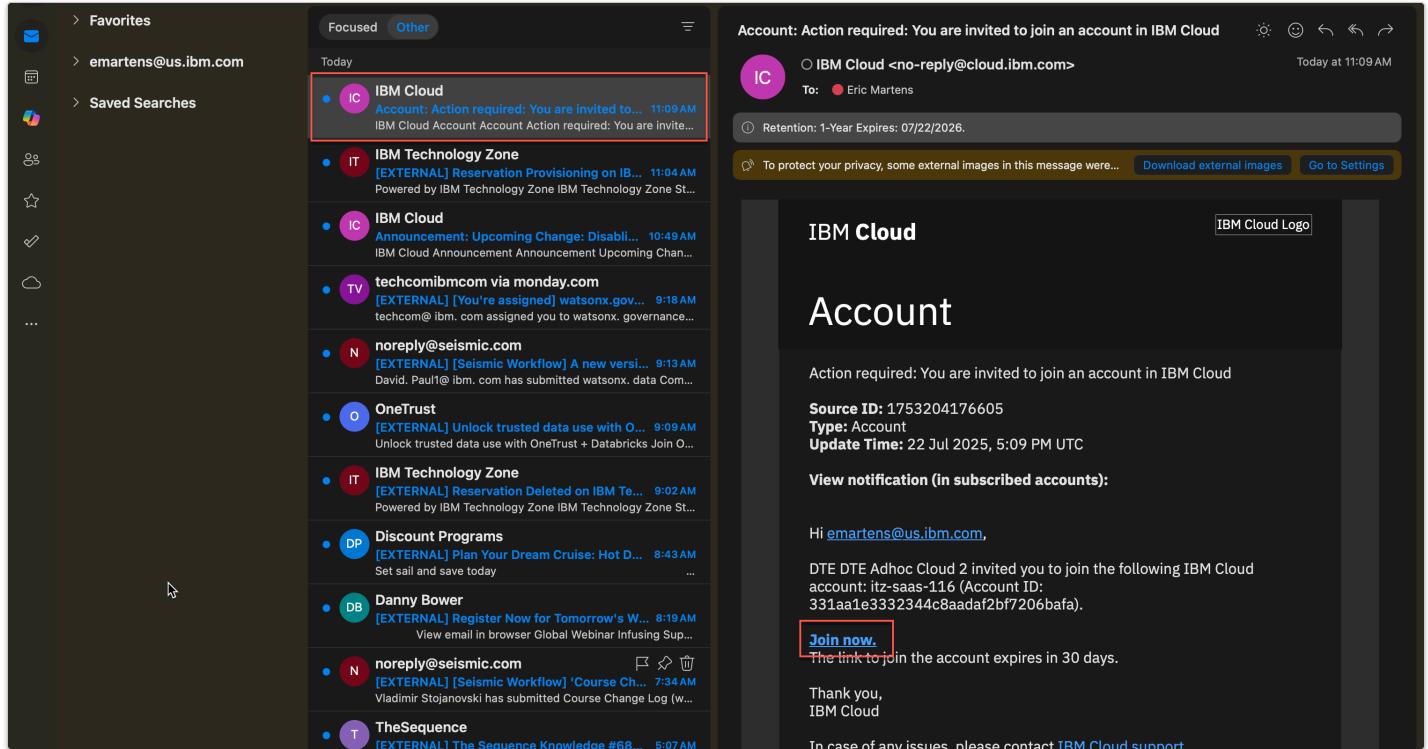
account and can perform the lab actions on your environment. Some adaptation to the user interface and code will be necessary; unfortunately, at the time of writing, GPU-equipped clusters are not obtainable, so specific instructions for replicating these steps in that environment are not available.

1. Reserve a watsonx.ai SaaS account

In this section of the lab, you will reserve an account with access to the watsonx.ai services, which will allow you to develop, deploy, and evaluate generative AI models. You will use a TechZone shared account. **Only perform this if your software cluster DOES NOT have watsonx.ai installed.** If your cluster does have watsonx.ai, proceed to the [Configure a model inventory](#) step.

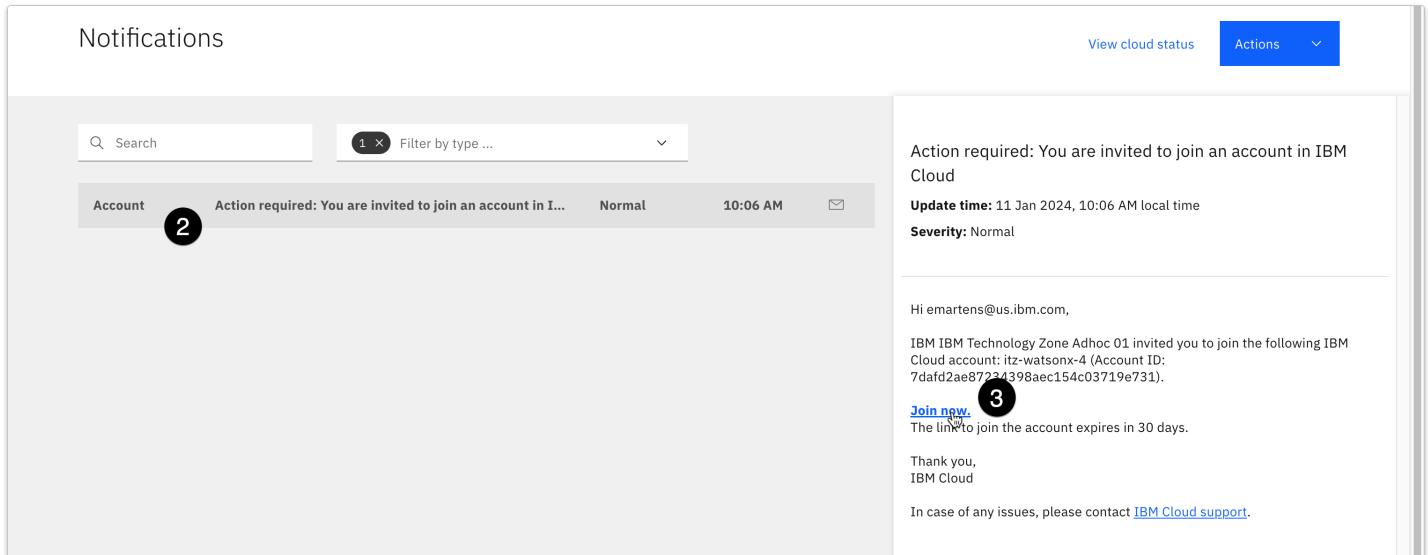
WHEN USING TECHZONE SHARED ACCOUNTS, DO NOT ATTEMPT TO PROVISION NEW INSTANCES OF SERVICES SUCH AS WATSON MACHINE LEARNING OR WATSONX.GOVERNANCE. Doing so will create lite versions of these, which will immediately run out of capacity, and possibly impact other users.

1. Click on the link for the [IBM watsonx.ai/watsonx.governance SaaS base image](#) and follow the instructions to make a reservation, which will provide access to a Cloud account with the necessary services for a limited time. When your reservation is complete, you should receive an email notification inviting you to the account.



The screenshot shows the IBM Cloud notifications page. A specific email notification is highlighted with a red box. The notification is from 'IBM Cloud' and contains the subject: 'Action required: You are invited to...'. The body of the email includes the message: 'Account: Action required: You are invited to join an account in IBM Cloud', the recipient 'To: Eric Martens', and a note about retention: 'Retention: 1-Year Expires: 07/22/2026'. Below the email is a preview of the account invitation page, which displays the same information and a large 'Join now.' button.

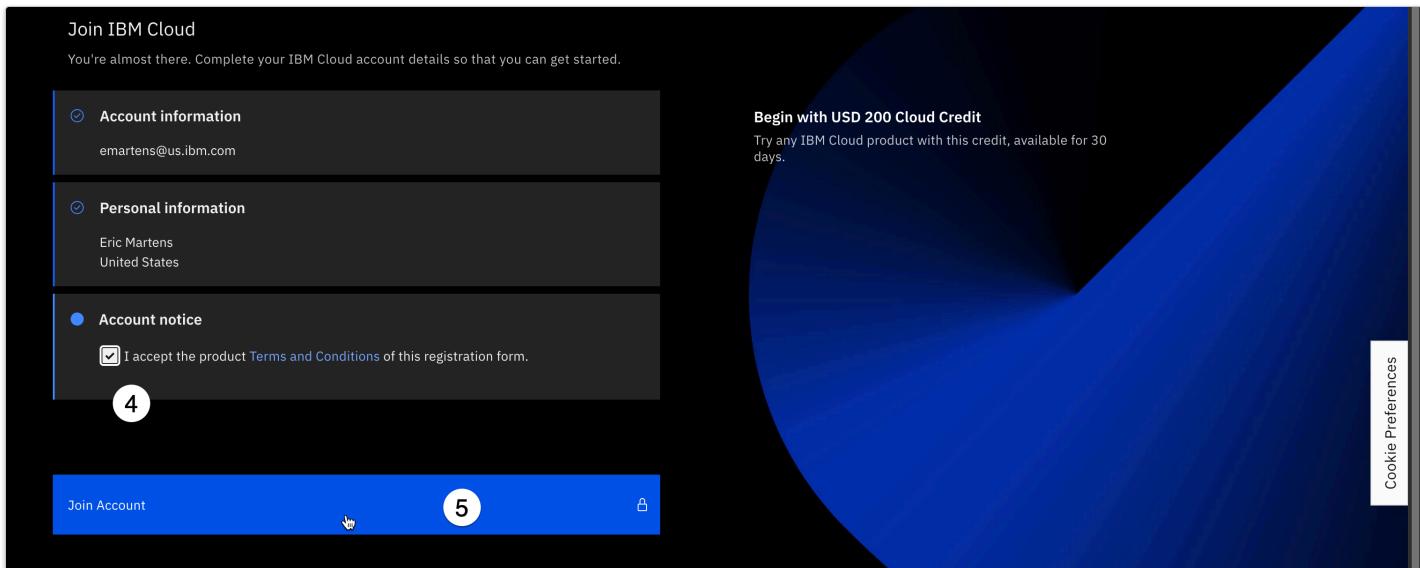
2. Once you have received the email, navigate to your [notifications page](#) and click on the **Action required...** notification to open it.
3. Click on the **Join now** link in the notification to accept your invitation to the account.



The screenshot shows the IBM Cloud notifications page with one notification selected. The notification details are as follows:

- Account:** IBM Cloud
- Action required:** You are invited to join an account in IBM Cloud
- Type:** Account
- Update Time:** 22 Jul 2025, 5:09 PM UTC
- View notification (in subscribed accounts):**

The notification body includes a greeting 'Hi emartens@us.ibm.com,' and a message from 'DTE DTE Adhoc Cloud 2' inviting the user to join an account. It provides the account ID: 331aa1e3332344c8aadaf2bf7206bafa. A prominent 'Join now.' button is displayed, with a red box and the number '2' indicating it is the next step. Below the button, a note states: 'The link to join the account expires in 30 days.'



6. When the IBM Cloud dashboard loads, ensure you are logged into the correct account by clicking the **account dropdown** in the upper left.

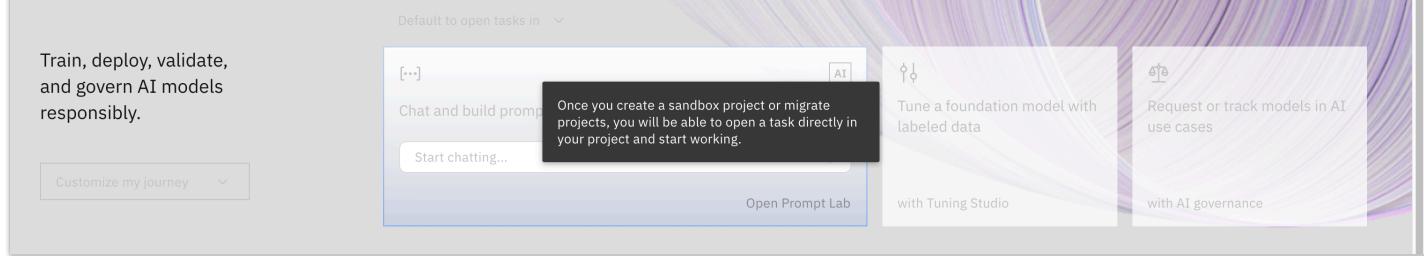
7. Click on the correct account from the list. If you are not sure which account is the correct one, log into the [TechZone reservations page](#), click on the reservation, and scroll down to the **Environment** section, which contains the **Cloud Account** name.

2. Deploy a watsonx prompt template

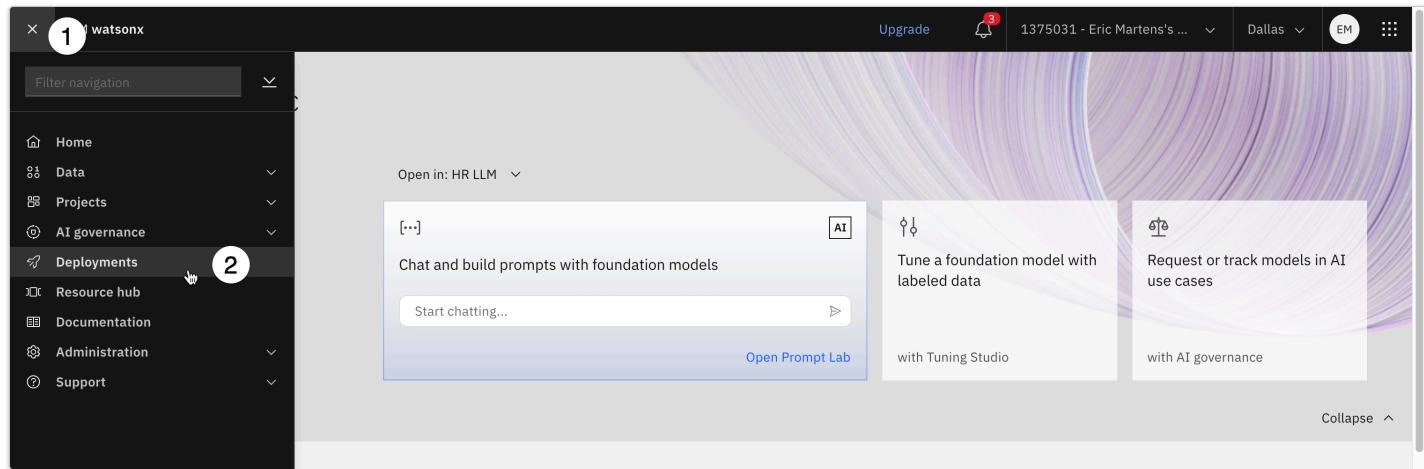
To deploy a watsonx model, you must first create a deployment space. A [deployment space](#) is an object in Cloud Pak for Data and watsonx that contains deployable assets, deployments, deployment jobs, associated input and output data, and the associated environments.

Note: If you are using a TechZone SaaS account, ensure that you have switched to the correct account and region in the upper right portion of the screen.

Welcome back, Eric



- From the [watsonx home screen](#), click on the **hamburger menu** in the upper left.
- Click on the **Deployments** menu item. The **Deployments** screen opens.



- Click on the **New deployment space** button. The **Create a deployment space** screen opens.
- Enter **watsonx resume summarization** in the **Name** field.
- Click on the **Select storage service** dropdown and select an available Cloud Object Storage instance.
- Click on the **Select a machine learning service** dropdown and select an available Watson Machine Learning service.
- Click on the **Deployment stage** dropdown and select **Development**.

Note: If an object storage or machine learning service is unavailable, **DO NOT ATTEMPT TO PROVISION A NEW SERVICE**, especially if using a TechZone account. Instead, verify that you have switched to the correct account and region as specified above step 1 above. Verify that the account and region match your [TechZone reservation](#). If you are still unable to access the services, attempt to create your deployment space in your browser's private/incognito mode. If all of these steps fail, contact [TechZone help](#), or [Eric Martens via Slack](#) to troubleshoot the issue.

Create a deployment space

Use a space to collect assets in one place to create, run, and manage deployments

Define details

Name **4**

Description (Optional)

Deployment stage **7**

Deployment space tags (optional)

Select services

Select storage service **5**

Select machine learning service (optional) **6**

Upload space assets (optional)
Populate your space with assets exported from a project or space to a .zip file. You can add more assets after the space is created.

Next, you will create a watsonx project containing a simple prompt template, which can be deployed to your space.

10. Right click and download the [resume summarization project](#) project zip file to your machine.
11. Click the **hamburger menu** in the upper left.
12. Click on the **Projects** menu item to expand it.
13. Click on the **View all projects** menu item. The **Projects** screen opens.

The screenshot shows the WatsonX interface with the title bar "watsonx" and a user icon. The left sidebar is open, showing navigation options like Home, Data, Projects (which is expanded), View all projects (circled with 13), Jobs, AI governance, Deployments, Resource hub, and Documentation. A blue button at the top right says "New deployment space". The main area displays a table of projects:

	Last modified	Your role	Collaborators	Tags	Type	Online deployments	Jobs
	May 27, 2024, 10:41 PM	Admin	EM		Development	0	0
	Jan 23, 2024, 4:49 PM	Admin	EM		Testing	2	0

14. Click the **New project** button. The **Create a project** screen opens.
15. Click the **Local file** option from the list in the left panel.
16. Drag and drop the project file you downloaded to the center portion of the screen, or click the **Browse** button to locate the file on your machine.
17. Enter **watsonx resume summarization** in the **Name** field.
18. Click the **Target Cloud Object Storage Instance** dropdown and select an object storage instance from the list.
19. Click **Create** to create your project. Project creation can take up to two minutes to complete.

The screenshot shows the "Create a project" dialog. On the left, there's a sidebar with "+ New", "Local file" (circled with 15), and "Sample". The main area has fields for "Name" (circled with 17) containing "watsonx resume summarization", "Description (optional)" with placeholder "What's the purpose of this project?", "Tags (optional)" with placeholder "Start typing to add tags", and "Define storage" with a dropdown set to "Select storage service" (circled with 18) showing "Cloud Object Storage-AIOS data". At the bottom, there's an "Advanced settings" section and a "Cancel" button next to a "Create" button (circled with 19).

20. When the project has been successfully created, click the **View new project** button in the dialog. The project information screen opens.
21. Click the **Assets** tab.
22. Click the **three vertical dots** to the right of the **Resume Summarization** prompt template in the list to open the context menu.
23. Click on the **Promote to space** menu item. The **Promote to space** window opens.

The screenshot shows the 'Assets' tab in the WatsonX interface. A context menu is open over an asset named 'Resume Summarization'. The menu items are: Evaluate (22), Go to AI factsheet, Promote to space (23), Track in AI usecase, and Delete.

24. Click on the **Target space** dropdown and select the **watsonx resume summarization** space you created in previous steps.
25. Check the box next to **Go to the space after promoting the assets**.

The screenshot shows the 'Promote to space' dialog box. The 'Target space' dropdown is set to 'watsonx resume summarization' (24). The 'Go to the space after promoting the assets' checkbox is checked (25). On the right, a table titled 'Selected assets (1)' shows one asset: 'Resume Summarization' (Name), 'Prompt template' (Format), 'Current' (Version), and 'Queued' (Status).

26. Click the **Promote** button. The template will be promoted to the space, and the space screen opens.
27. Click the **New deployment** button. The **Create a deployment** window opens.
28. Enter **watsonx resume summarization** in the **Name** field.
29. Click the **Create** button to create the deployment. When the deployment has been successfully created, it will be available as a REST endpoint that can be called via the command line or Jupyter notebook. You can now proceed to gather the necessary credentials to perform those calls.

3. Gather watsonx credentials

In this step, you will copy the public endpoint for the deployed model and generate an API key that will allow you to authenticate and call the model from a Jupyter notebook to perform evaluations.

Note: THESE CREDENTIALS ARE FOR THE IBM CLOUD SAAS ENVIRONMENT, and are distinct from those you created earlier in the lab. They will be used to call the deployed watsonx model. When copying and pasting them into a text file, be sure to denote which credentials are for your Cloud Pak for Data software environment, and which are for the watsonx SaaS environment.

1. Click on the link for the new deployment from the list of deployments. The deployment details screen opens to the **API reference** tab.



Four endpoints are available; two private, and two public.

- Click the **copy icon** to the right of the top **Public endpoint** to copy the URL to your clipboard. Paste the URL into a text file; you will use it in the hands-on lab as the **WATSONX_BASE_URL**.

watsonx resume summarization Deployed Online

API reference Test Evaluations AI Factsheet

Direct link

Private endpoint

Bearer <token> ⓘ IAM

<https://private.us-south.ml.cloud.ibm.com/ml/v1/deployments/add4a1f1-1917-47a3-a708-81fe585b8478/text/> Copy

<https://private.us-south.ml.cloud.ibm.com/ml/v1/deployments/add4a1f1-1917-47a3-a708-81fe585b8478/text/> Copy

Public endpoint

<https://us-south.ml.cloud.ibm.com/ml/v1/deployments/add4a1f1-1917-47a3-a708-81fe585b8478/text/generate> Copy 2

<https://us-south.ml.cloud.ibm.com/ml/v1/deployments/add4a1f1-1917-47a3-a708-81fe585b8478/text/generate> Copy

[Learn more](#) about the 2021-05-01 version query parameter

About this deployment

Name watsonx resume summarization

Description No description provided.

Deployment Details Deployment ID: add4a1f1-1917-47... Serving name: No serving name. Copies: 1

Tags Add tags to make assets easier to find.

Associated asset ([Resume Summarization](#)) 6bd170b6-881c-49b7-b50f-8a2531ae13bf

Next, you will need to create an IBM Cloud SaaS API key.

- Sign into [IBM Cloud](#).
- Ensure that you have switched to the correct IBM Cloud account that matches your [TechZone reservation](#).
- Click on the **Manage** button. The **Manage** menu opens.
- Click on the **Access (IAM)** menu item.

IBM Cloud Search resources and products... Manage 5 2701299 - itz-watsonx-4 4

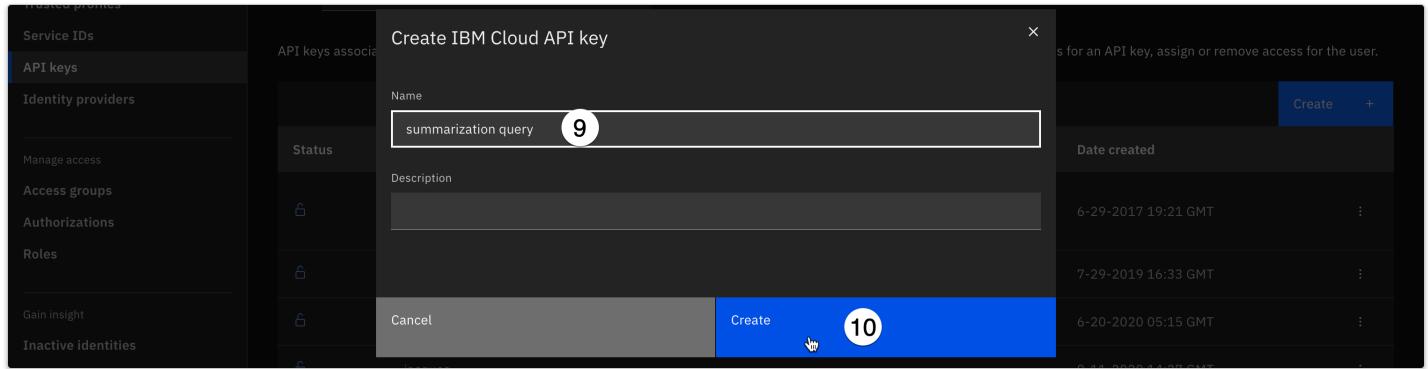
Dashboard

For you

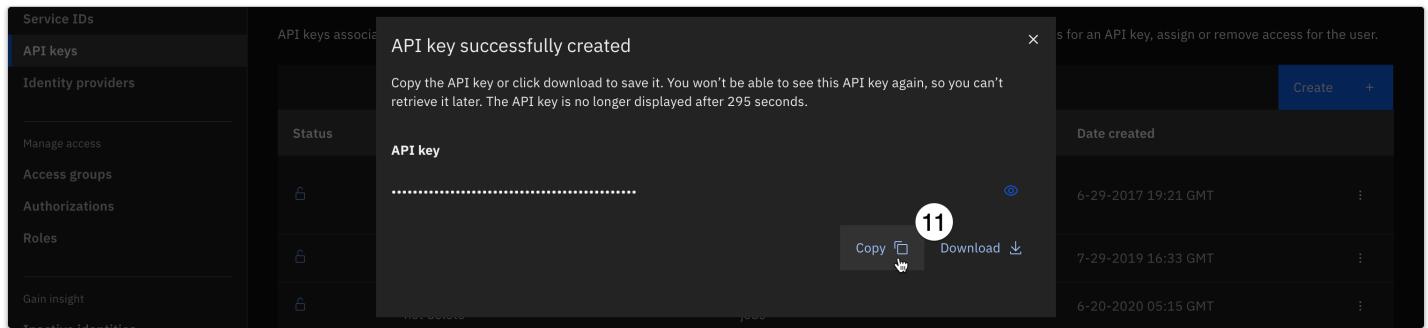
- Build** Explore IBM Cloud with this selection of easy starter tutorials and services.
- Get started with Containers & Kubernetes** Containers are a standard way to package apps, and their dependencies, to allow seamless movement between environments.
- Deploy on Kubernetes** With Kubernetes clusters, you can run, update, and scale containerized applications.
- Create a Kub** Automate dep... Manage your apps in a nat... 6
- Access (IAM)** Context-based restrictions
- Create an OpenShift cluster** Deploy apps on highly available clusters with Red Hat OpenShift on IBM Cloud.

- Click the **API keys** item from the **Manage identities** section in the panel on the right.

8. Click the **Create** button. The **Create IBM Cloud API key** dialog opens.
9. Enter **summarization query** in the **Name** field.
10. Click the **Create** button to create your key.



11. Click the **Copy** button to copy your key to the clipboard, then paste it into a text file. This key will be referenced in a Jupyter notebook in the hands-on lab as the **WATSONX_API_KEY** value.



Troubleshooting

This section contains descriptions of common issues that arise when provisioning and configuring a watsonx.governance environment.

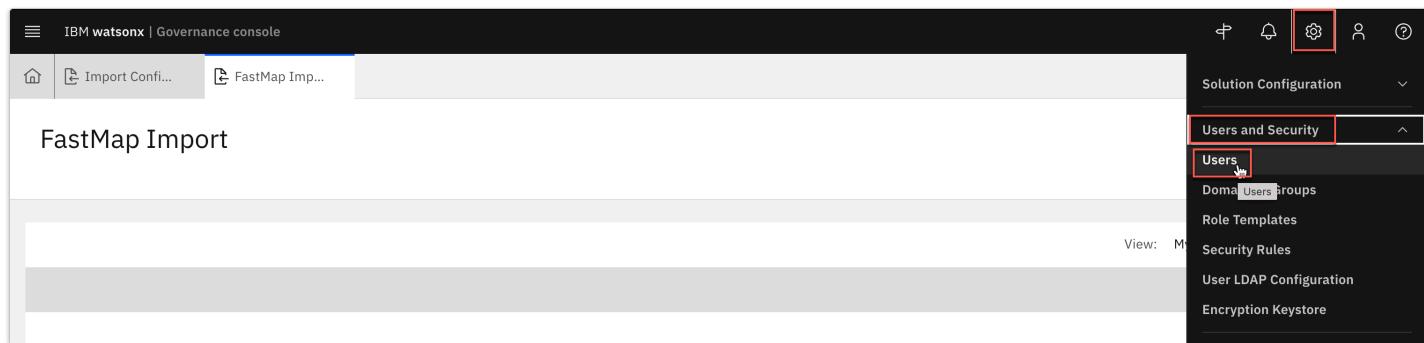
1. Software environment fails to provision

The environment used for this lab can fail to provision or deploy properly based on network conditions, capacity issues, or other problems. Deleting and recreating your reservation in a lower-traffic region such as Europe or Asia Pacific can frequently succeed. However, if problems persist, please [open a support ticket with TechZone](#) to address the issue.

2. Invalid users when importing the FastMap file

Occasionally when importing the FastMap file you may receive the following error:

If this happens, click the **Cancel** button to cancel the import. Then click the **Gear icon** to open the **Settings menu**. Click the **Users and security** menu item to open it, and click on the **Users** menu item.



Verify that the users in the screenshot below are listed in the **Users** table. If they are **NOT** listed, you may need to follow the instructions in the import the [4. Load sample users](#) section again to reload the users.

If they **ARE** listed in the table, then the OpenPages system may have not finished processing their addition. Please wait up to ten minutes, then attempt to load the FastMap file once again by following the instructions in the [5. Load sample organization and metrics data](#) section. If the FastMap file continues to fail, see the next section of the troubleshooting guide for getting more help.

3. Other governance console import errors

When importing FastMap (xlsx) or configuration (xml) files in the governance console, you may receive error messages like those in the screenshot below:

Validation Messages (06_Modules High Oaks All MRG_CP4D_483.xlsx)					
Type	Description	Sheet	Row	Column Index	Column Header
>Error	Invalid Property Type. (Watson OpenScale Metric)	Metric Values	0	AA	Watson OpenScale Metric
>Error	Invalid Property Type. (Watson OpenScale Metric Value)	Metric Values	0	AB	Watson OpenScale Metric Value

[Close](#)
[Cancel](#)
[Validate](#)

There are two likely causes for this. First, you may be importing the files in the wrong order; in this lab, the sample users configuration XML file should be uploaded before the organization's FastMap spreadsheet. Verify that the users file is present before you try and upload the FastMap.

Second, the version of the OpenPages service may not match the version of the FastMap file. Verify that you have downloaded the [latest version of the file](#). If the errors persist, contact Eric Martens via Slack or email.

