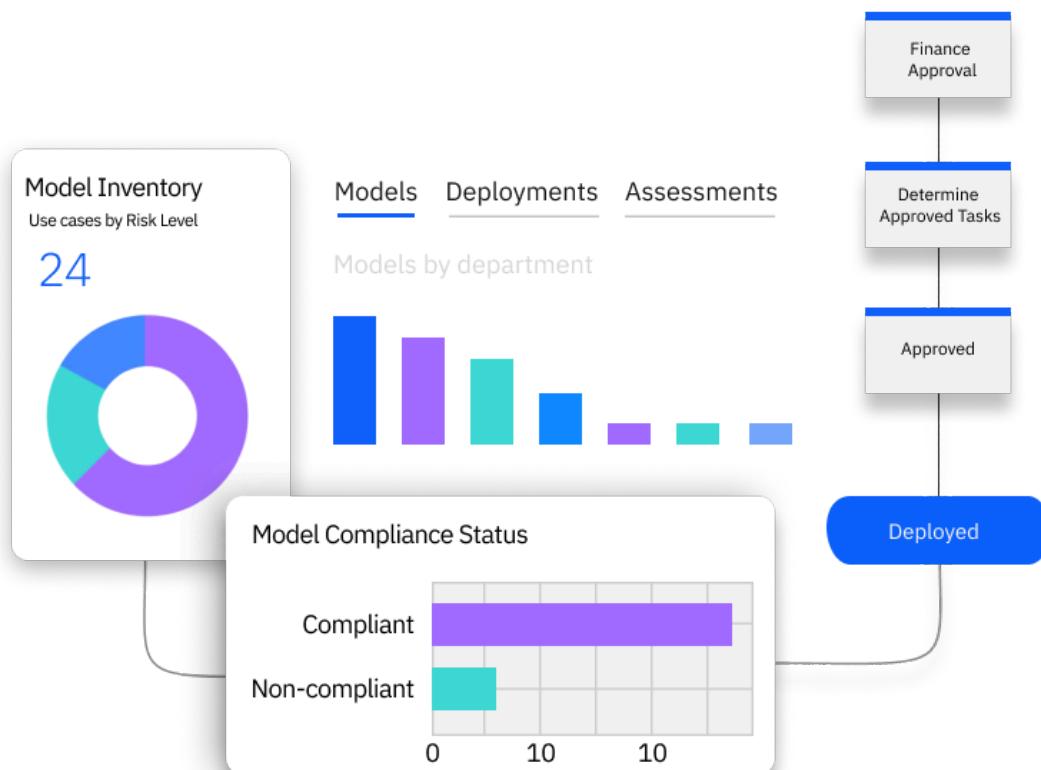


Govern predictive models

watsonx.governance

Hands-on Lab Guide



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Govern predictive models

Introduction

While much of the industry focus has been on ChatGPT and generative AI, the vast majority of models solving real-world business problems in production are traditional predictive machine learning models. Most organizations would significantly benefit from a governance solution for their predictive models, particularly given the increased regulatory environment.

In this lab, you will create a model to make hiring recommendations for the HR department. You will then evaluate that model and compare it to an external model running on Amazon SageMaker.

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.

Getting started

This lab assumes that you have access to a fully-configured watsonx.governance environment, with installed and running instances of the governance console (OpenPages), monitoring console (OpenScale), and Db2. It also assumes that the GlobalCorp business entities from the [user management](#) lab exist on the system. It does **NOT** assume that your environment is equipped with graphics processing units (GPUs). For instructions on provisioning and configuring an environment in TechZone, see the [watsonx.governance configuration lab](#). You will need the Cloud Pak for Data console URL and login credentials created in that lab.

Environment preparation

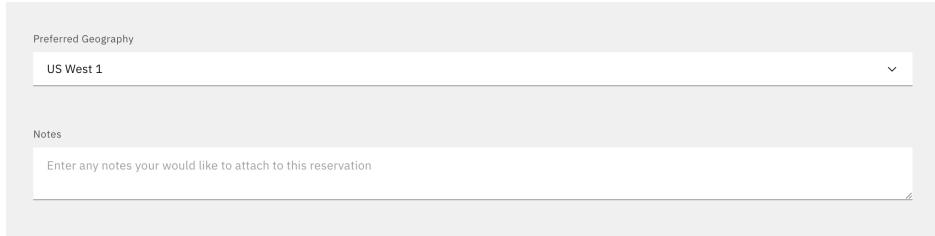
For this particular use case, your organization's AI engineers would like to use predictive models to screen job applications. You will develop an AutoAI model in Watson Studio for this task, and compare it to a model running on Amazon SageMaker. To access the SageMaker model, you will need to make a TechZone reservation.

 THE EVALUATIONS PERFORMED IN THIS LAB ARE NOT INTENDED TO SHOW THE RELATIVE STRENGTHS OF THE SAGEMAKER AND WATSON STUDIO PLATFORMS, AND SHOULD NOT BE PRESENTED AS SUCH.

1. Reserve a SageMaker instance

Temporary access to a SageMaker model can be reserved through IBM TechZone.

1. Click on the link for the [Access to Pre-Deployed SageMaker ML Models](#) TechZone environment.
2. Sign in to TechZone and fill out the form. For the **Preferred Geography** field, select **US West 1**.



The screenshot shows a user interface for reserving a SageMaker instance. It has two main sections: 'Preferred Geography' and 'Notes'. The 'Preferred Geography' section contains a dropdown menu with 'US West 1' selected. The 'Notes' section contains a text input field with placeholder text: 'Enter any notes you would like to attach to this reservation'.

3. Check the box to agree to the terms and conditions, then click the **Submit** button. After a short time, your reservation will be available in your [TechZone reservations list](#).

When the reservation has finished provisioning, you may proceed to the next step.

2. Collect SageMaker credentials

The SageMaker reservation comes with a set of credentials you can use to query the deployed model. Later on in the lab, you will use these credentials in a Jupyter notebook and the watsonx.governance monitoring service. For now, you will need to copy them to a text file on your machine so they can be pasted into the notebook later.

1. From your [TechZone reservations list](#), click on the tile for the [Access to Pre-Deployed SageMaker ML Models](#) reservation.
2. Scroll down to the **Environment** and **Reservation Details** sections. 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.

Environment

Note: Optimized by [IBM Turbonomic](#)

Reservation ID	Type
681cdca868d9e250ee6cfa7a	AWS
Request method	Transaction ID
aws-onboard-key	86c9063b-19e9-4df6-bfb9-73d508b90ac4
Cloud Account	Geo
ITZ	Datacenter
Region	Environment
us-west-1	
Customer data	Timeout action
false	
Idle runtime limit	
10800	

Reservation Details

AWS_ACCESS_KEY_ID	LHN7
AKI#	
AWS_SECRET_ACCESS_KEY

AWS Access Group
851725186284-AIModelValidatorUsers
AWS SSO User portal URL
<https://techzone.awsapps.com/start>

Now that you have the information necessary to access the external model, you may proceed to the next step.

Create and progress a use case

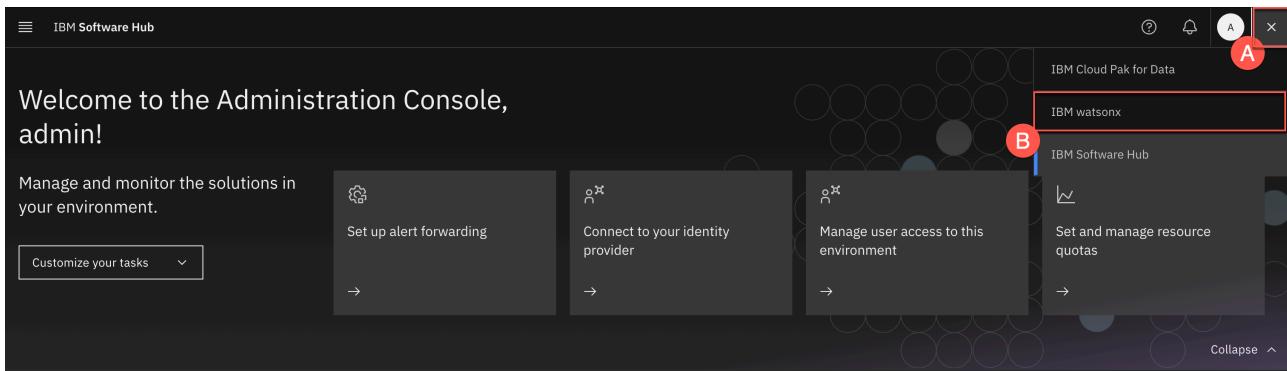
To ensure that model use cases are tracked across the entire solution, they should be created using the watsonx governance console. During the configuration of the environment you are using, you turned on integration between the governance console (OpenPages) and watsonx, so any actions related to model use cases should now redirect you to the governance console interface.

In a real-world scenario, this action would be performed by an organizational stakeholder who would like to request the development and implementation of a model; in this case, the manager of the human resources department, who is unable to keep up with the volume of applications submitted for employment opportunities and would like help from a machine learning solution.

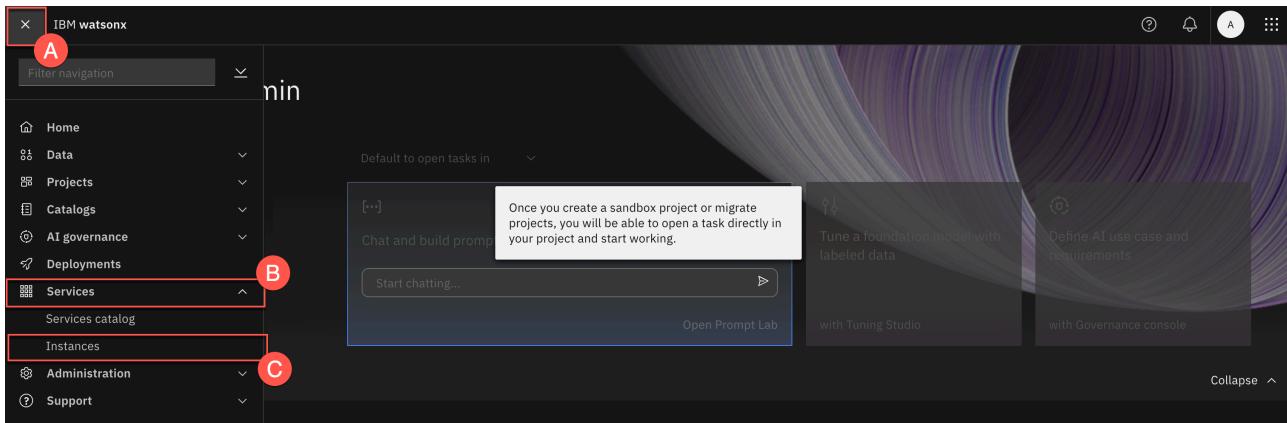
1. Sign in to watsonx.governance

For this portion of the lab, you perform actions as the **admin** user. In a real-world scenario, you administrators would provide different levels of access to different users, taking advantage of pre-defined **roles** in Cloud Pak for Data and watsonx. While creating and managing multiple user personas and groups is beyond the scope of this lab, doing so can provide a more realistic PoX or demo for your client, particularly if they are unfamiliar with Cloud Pak for Data, watsonx, and the level of access control and collaboration provided.

1. In a web browser window, navigate to the watsonx home page using the credentials for the environment you provisioned and configured in prior labs. If you are asked to log in, skip ahead to step 4. If you opened the home page and are signed in, you will need to log out.
2. Click on the **grid icon** in the upper right to open the context menu (A). If necessary, click on the **IBM watsonx** menu item (B) to change the context. A **Welcome to watsonx** popup window may open. Close the popup window, or click the **Take a tour** button if you wish.



3. Click on the [navigation menu](#) in the upper left (A) to open it. Click on the [Services](#) menu item (B) to expand it. Click on the [Instances](#) menu item (C). The [Instances](#) screen opens.



4. From the [Instances](#) list, locate and click on the [OpenPages](#) instance.

Service instances							Last updated: 9/9/2025 9:27 AM
Name	Type	Data plane	Physical location	Created by	Created on		New instance
cpd-database Db2 12.1.2.0-amd64	db2oltp	—	—	admin	Aug 22, 2025		
ca-metastore Db2 12.1.2.0-amd64	db2oltp	—	—	admin	Aug 20, 2025		
openscale-defaultinstance IBM Watson OpenScale	aios	—	—	admin	Aug 20, 2025		
openpagesinstance-cr OpenPages Instance	openpages	—	—	admin	Aug 20, 2025		

5. Scroll down to the [Access information](#) section of the screen and click on the [Launch](#) icon to launch the watsonx governance console (OpenPages).

The screenshot shows the configuration details for the 'openpagesinstance-cr' instance. It includes sections for 'Access information' and 'Database configuration'. In the 'Access information' section, the URL is listed as <https://cpd-cpd.apps.68a5d160358f0f4c45d66d6e.ap1.techzone.ibm.com/openpages-openpagesinstance-cr/>. A red box highlights the 'Launch' icon next to the URL. In the 'Database configuration' section, fields include Database type (Internal database), Use dedicated nodes (False), Node label, Data storage class (ocs-storagecluster-ceph-rbd), Metadata storage class (ocs-storagecluster-cephfs), Backup storage class (ocs-storagecluster-cephfs), Database secret name, and Database secret key.

6. Once the governance console opens, you may need to switch to the correct profile to see all the applicable fields. Click the [avatar icon](#) in the upper right (A). The [User](#) menu opens. Click the [Change Profile](#) menu item (B). The [Select profile](#) dialog opens.

Take a moment to review the different profile roles and descriptions available. Each of these can be customized, or new profiles created, to fit the structure and requirements of the organization. While this lab will deal primarily with the [watsonx-governance MRG Master](#) for governing models, pre-defined profiles also exist for regulatory compliance officers ([watsonx-governance RCM Master](#)) and for risk managers ([watsonx-governance ORM Master](#)).

7. Click on the [watsonx-governance MRG Master](#) profile from the list to select it.

8. Click [Save](#) to finalize your choice.

Note that when you return to the dashboard, it is populated with several charts displaying metrics for the sample models and use cases you loaded in the configuration step. The pre-defined roles have been created to display the information most useful for that role in their dashboards. Like all aspects of the governance console, the dashboard charts can be customized per role, or per individual user.

2. Create a model use case

The model governance process begins with the creation of a model use case. A use case is meant to track and capture information about a collection of models and prompts that will be built to serve a particular purpose. A use case should be created whenever there is a business need requiring the use of a model (AI or non-AI) to be built. Model records should then be added as a child of the use case.

To ensure that model use cases are tracked across the entire solution, they should be created using the watsonx governance console. In the configuration lab, you turned on integration between the governance console (OpenPages) and watsonx, so any actions related to model use cases should now redirect you to the governance console interface.

1. Click on the [Navigation menu](#) in the upper left (A) to open it. Click on the [Inventory](#) menu item (B) to expand it. Click on the [Use Cases](#) menu item (C). The [Use Cases](#) tab opens.

2. Click on the [New](#) button on the right. The [New Use Case](#) tab opens.

Use Cases (3)

Name	Purpose	Description	Owner	Status	Risk Level	Tags
Employee Chatbot GlobalCorp > Human Resources		A chatbot used for assisting employees with HR questions.	ahassan@global.com	Approved for Development	Medium	
Job Applicant Screening GlobalCorp > Human Resources	Screening job applications to ease the burden of the hiring manager.	Reviews job applications and resumes and returns a list of qualified candidates to contact for interviews.	ahassan@global.com	Proposed	Medium	
Resume Scanner GlobalCorp > Human Resources		Scan resumes of job applicants to identify keywords and select the most suitable applicants for job postings.	ahassan@global.com	Approved for Development	High	

3. Enter Application screening into the Name field (A). Enter admin into the Owner field (B). Enter Screen applicants for positions or similar text in the Description field (C).

New Use Case

*Modified Required *

General ⓘ

* Name * A Application screening

* Owner * B admin

Search users

Purpose

* Description * C Screen applicants for positions.

Use Case Type

Use Case creation ⓘ

A use case is meant to track and capture information about a collection of models that will be built to serve a particular purpose. A use case should be created whenever there is a business more

1 item requires attention.

All Key Items (6) v

✓ Name *

✓ Owner *

4. Scroll down to the Business Entities section and click the Add button. The Add dialog opens.

5. Locate the Human Resources entity from the list (A) and click on it. Click on the Done button (B) to add the entity and close the dialog.

Add

EXAMPLE PREFERENCES Library > Example Preferences

Foundation Models Library > MRG > Foundation Models

GlobalCorp GlobalCorp

Human Resources GlobalCorp > Human Resources A

Information Technology GlobalCorp > Information Technology

Legal GlobalCorp > Legal

Library Library

MRG Library > MRG

Questionnaire Templates Library

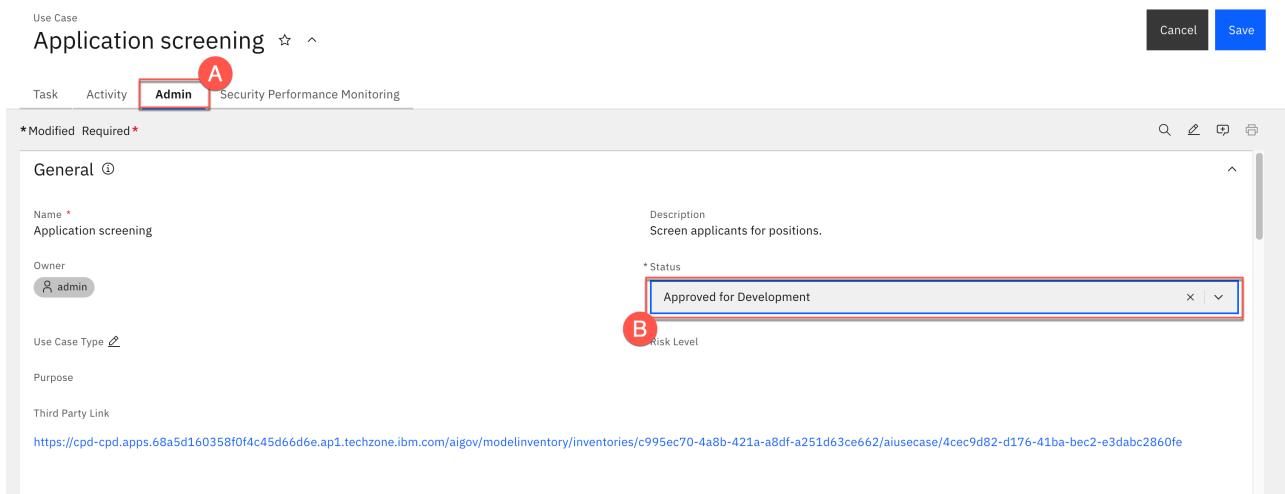
Cancel Done B

6. Click the Save button in the upper right to save the use case information.

In a real-world scenario, you would now follow the same process you used for the generative model use case to approve the model use cases for the predictive models. You may do so now if you wish, or you may continue on with the lab by using your administrator privileges to progress the use case directly to the Approved for Development stage.

7. To immediately progress the use case, click on the Admin tab (A). Hover your mouse over the Status dropdown to cause the edit icon to appear, then click on it and select the Approved for Development

menu item (B).



8. Click on the **Save** button to save your changes to the use case.

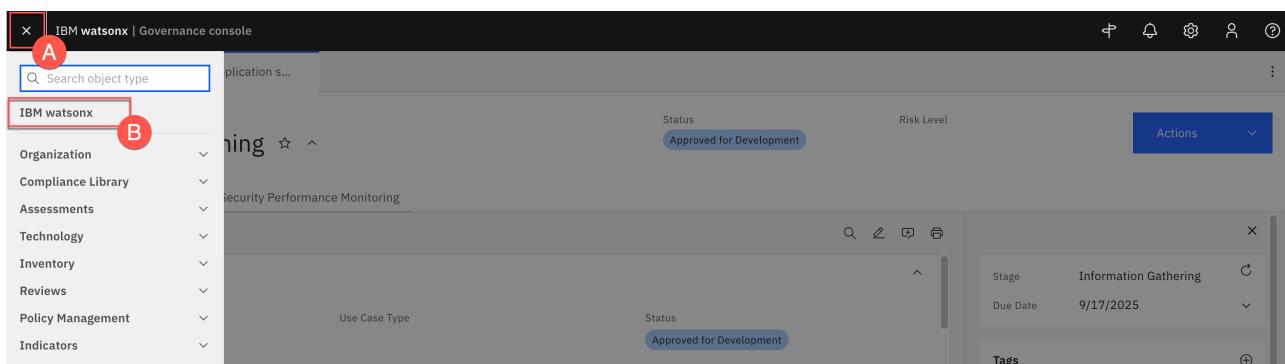
Create projects and spaces

Now that the use case for the model has been approved, you can create the models. The steps in this section would be typically undertaken by data scientists and AI engineers, as they work with data developed and cleaned by the data engineers to build models. This lab does not focus on the details of model creation and deployment; instead, you will rapidly prototype a model using [IBM's AutoAI service](#), and deploy it in your environment. Next, you will evaluate it as well as a similar model deployed on AWS SageMaker.

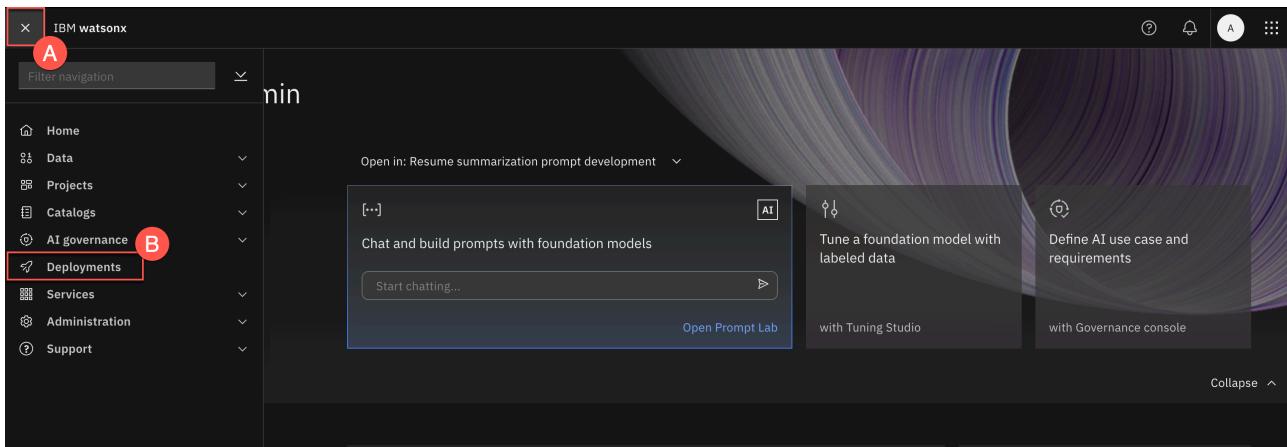
1. Create deployment spaces for the hiring model

Much like you did with the generative model in that lab, you will need to create deployment spaces so your model can be accessed via REST API.

1. Return to the watsonx home screen by clicking on the **Primary menu** (A) to open it, then clicking on the **IBM watsonx** menu item (B). Ensure that you are using the watsonx context (as opposed to the Cloud Pak for Data context).



2. Click on the **navigation menu** in the upper left (A) to open it. Click on the **Deployments** menu item (B). The **Deployments** screen opens.



3. Click on the [New deployment space](#) button to create a deployment space. A **deployment space** is an object in watsonx that contains deployable assets, deployments, deployment jobs, associated input and output data, and the associated environments.
4. Enter [application screening development](#) in the **Name** field (A). Click on the dropdown for **Deployment stage** and select **Development** (B).

Create a deployment space

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

Define details

Name application screening development A

Description (Optional) What's the purpose of this space? 0/100

Deployment stage B Development

Tags (optional) Find or create tags Add tags to make assets easier to find

(i) This metadata for the space will be used by the monitoring service (OpenScale) to determine how data for the model is stored in the datamart when performing evaluations. Predictive models hosted internally (in the same Cloud Pak for Data environment as the monitoring service) that are deployed to **Production** spaces will automatically have their input and output data recorded in the datamart, and evaluations will be performed on that data. Models hosted in non-production spaces will be evaluated based on comma-separated value (CSV) file uploads.

5. Click on the [Create](#) button to create the deployment space. When the space is finished creating, you will be able to deploy models to it as REST endpoints, and can begin monitoring the models in the monitoring service.
6. When the dialog window shows [The space is ready](#), click the [View new space](#) button. The new space opens. From this screen, you can view the different assets associated with the space, or set access controls using the [Manage](#) tab. Note that this space is for pre-production development. Next, you will create the production space for when the model is ready to be deployed.
7. Click on the [Deployments](#) link in the upper right to return to the [Deployments](#) screen.

8. Click on the [New deployment space](#) button to create another new space.

9. Enter **application screening production** in the **Name** field (A). Click on the dropdown for **Deployment stage** and select **Production** (B).

Create a deployment space

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

Define details

Name application screening production A

Description (Optional)
What's the purpose of this space?

Deployment stage B
Production

10. Click on the [Create](#) button to create the space. When the creation process is finished, either close the popup window by clicking on the **x** button, or click on the [View new space](#) button to see the details of the new space.

2. Create the hiring model project

Next, you will build the hiring model, and begin tracking it through the approved hiring use case you created and moved through the workflow in previous steps.

1. Click on the **Navigation menu** in the upper left (A). Click on the **Projects** menu item (B) to open it. Click on the **All projects** menu item (C). The **Projects** screen opens.

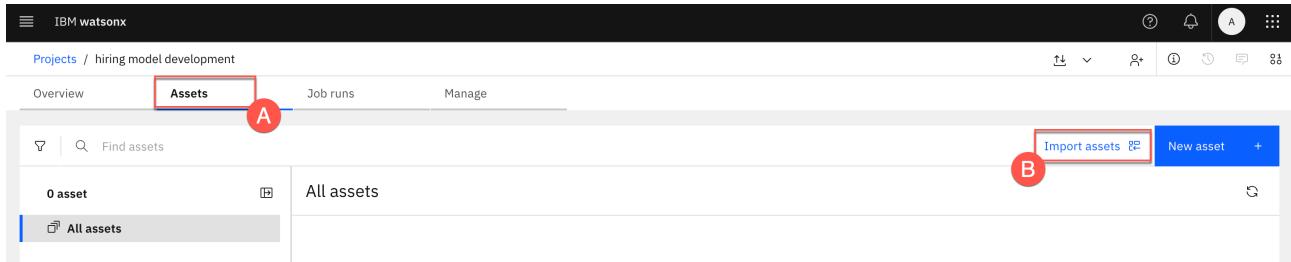
2. Click the [New project](#) button to create a new project. The [Create a project](#) screen opens.

3. Enter **hiring model development** in the **Name** field.

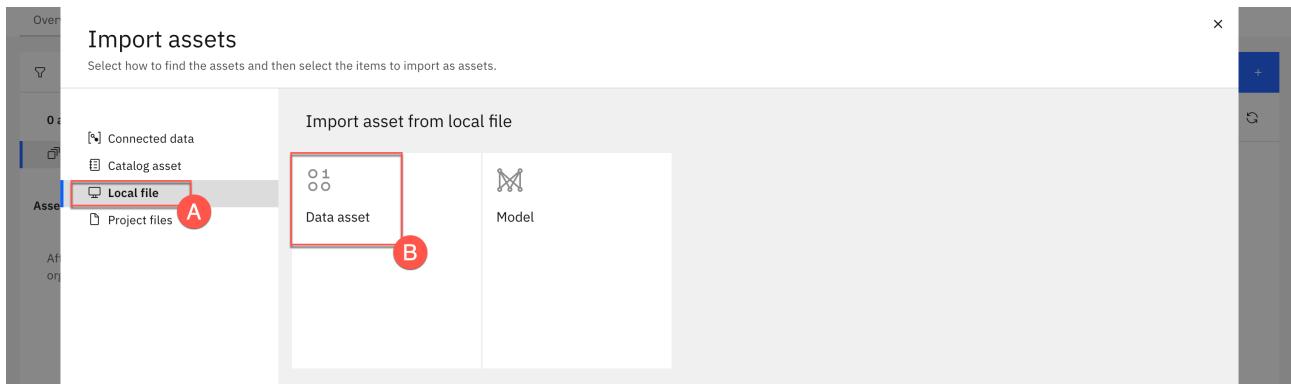
4. Click the [Create](#) button. A new empty project will be created, and will open to the [Overview](#) tab.

5. Right-click on the link for the [hiring training data file](#) and save it to your hard drive. Ensure that the file is saved with the [.csv](#) (comma-separated value) extension.

6. Click on the [Assets](#) tab (A). From the [Assets](#) tab, click on the [Import assets](#) button (B).



7. Click on the [Local file](#) button on the left (A). Click on the [Data asset](#) tile (B).

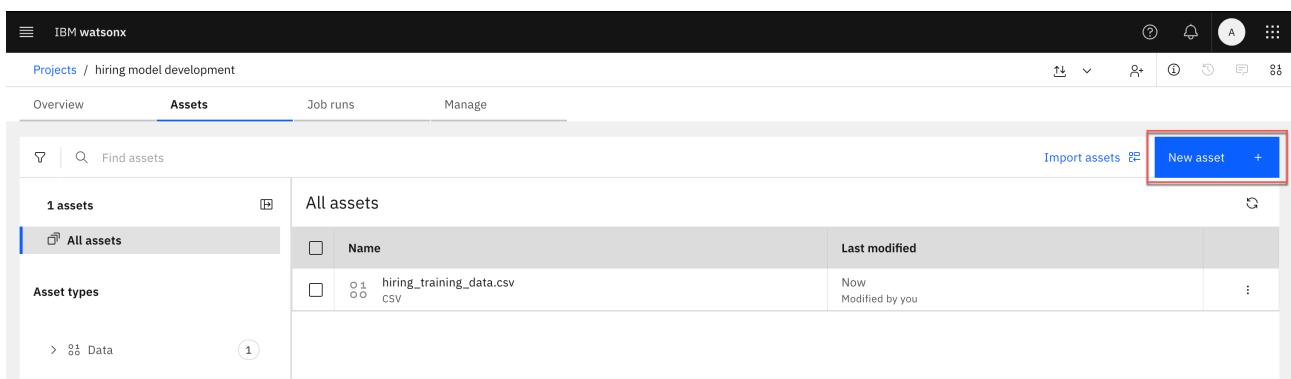


8. From the [Drop data files here...](#) screen, click on the [Browse](#) button and select the CSV file you downloaded in step 5. When the file has been imported, click on the [Done](#) button to return to the [Assets](#) tab of the project screen. The CSV file should be listed on the screen.

3. Create the hiring model

Next, you will use the training data to create a model with AutoAI.

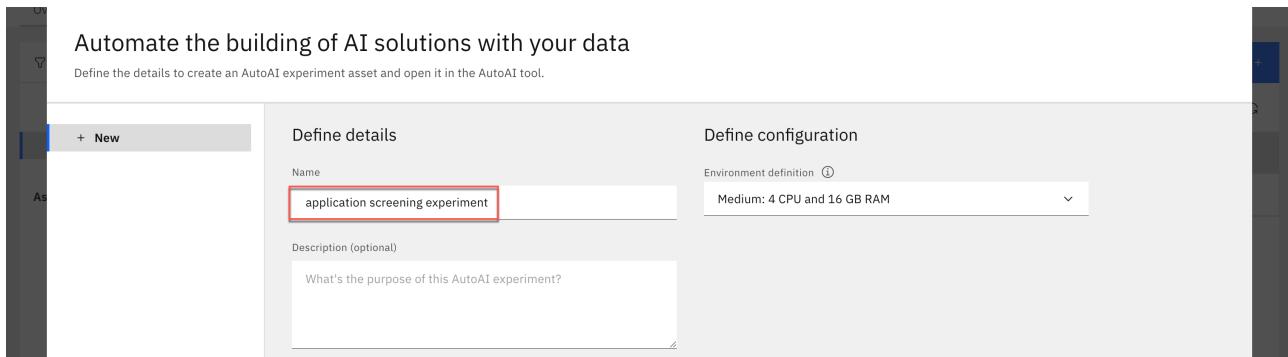
1. Click on the [New asset](#) button. The [What do you want to do?](#) window opens.



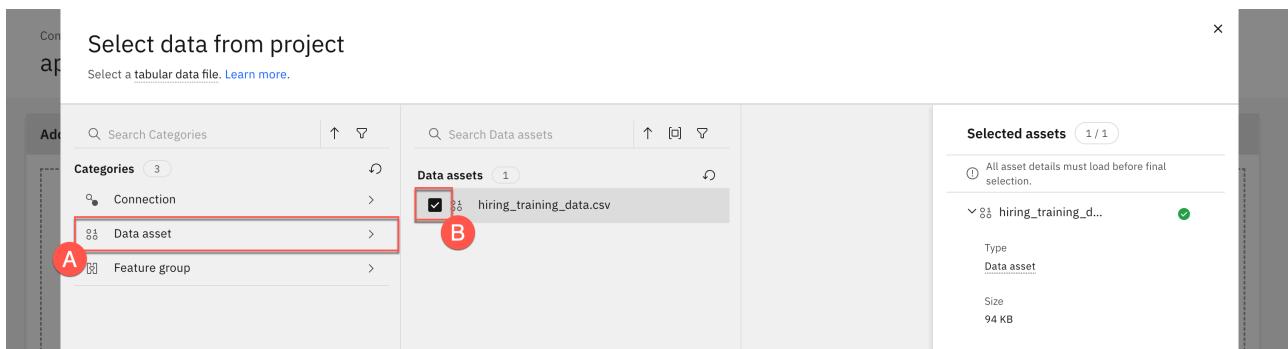
2. From the [Work with models](#) section, click on the [Automate the building of AI solutions with your data](#) tile. The [Build machine learning models automatically](#) window opens.

⚠️ The name of this tile periodically changes; you can type *AutoAI* in the search field to find the correct tile if the titles do not match.

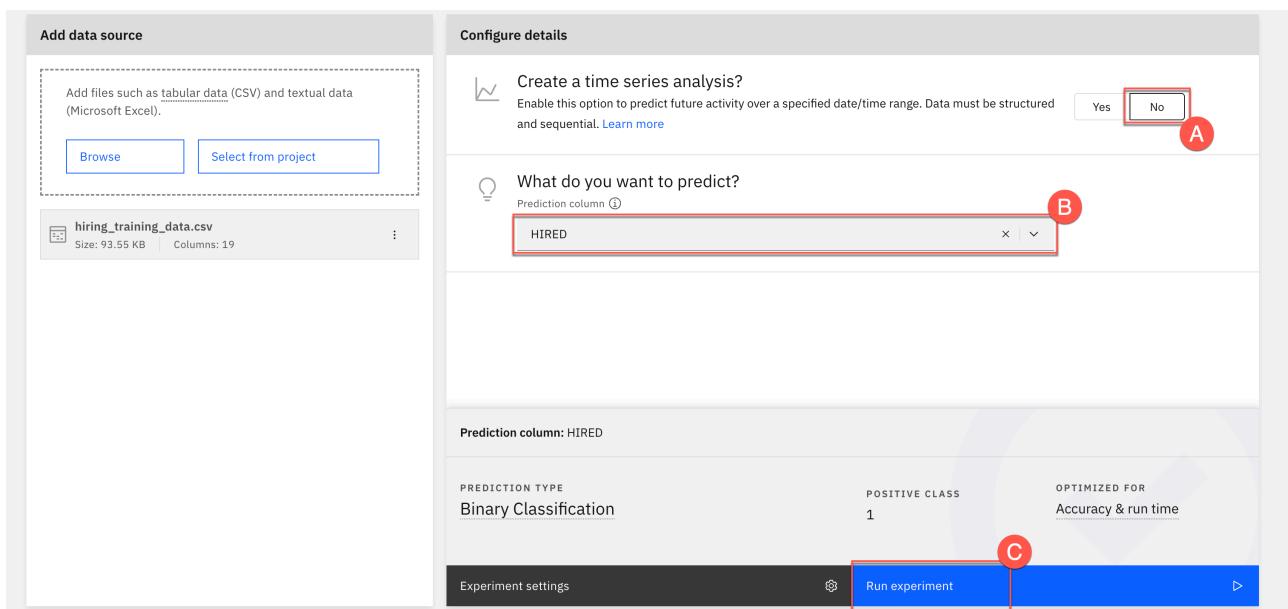
3. In the [Define details](#) section, enter [application screening experiment](#) in the [Name](#) field.



4. Click on the **Create** button to create the experiment. The **Add data source** window opens.
5. Click on the **Select data from project** button. The **Select data from project** window opens.
6. From the **Categories** list, click on the **Data asset** item (A). The **Data assets** list appears, showing all data assets in your project. Check the box to the left of the training data file you uploaded to the project (B).



7. Click on the **Select asset** button in the bottom right. The **Configure details** panel opens.
8. Click **No** in the **Create a time series analysis?** section (A). In the **What do you want to predict?** section, click on the **Prediction column** dropdown and select **HIRED** (B). Click on the **Run experiment** button (C). The AutoAI service begins running, generating eight potential pipelines for a machine learning model. Note that it can take up to ten minutes to finish.



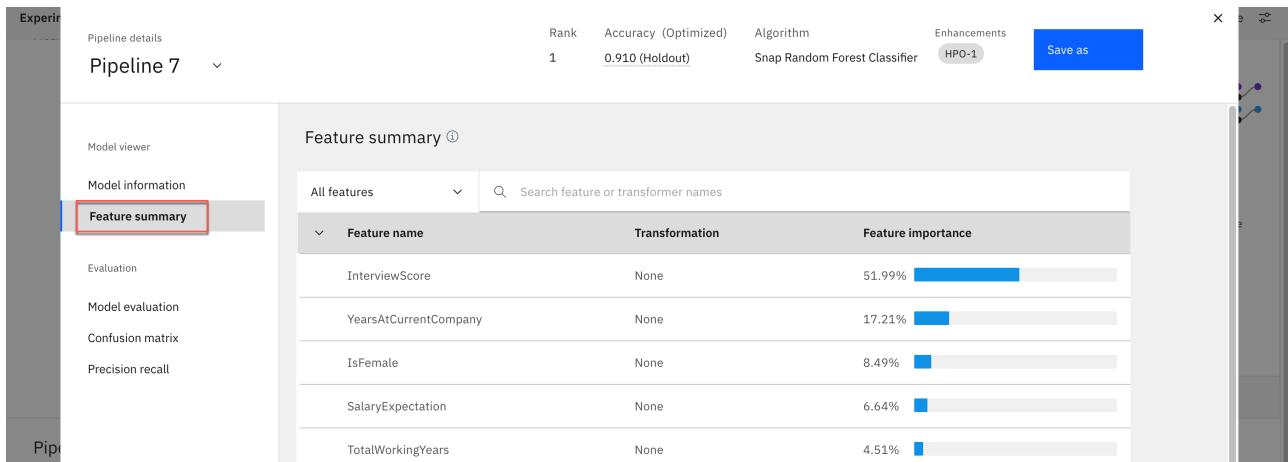
When the service finishes, the **Experiment summary** screen will show the pipelines generated, ranked based on accuracy. Note that the algorithm with the highest accuracy will likely differ than the screenshot below, based on the random selection of training and test data performed by the model.

9. From the [Pipeline leaderboard](#) table, click on the entry with the highest accuracy score. The [Pipeline details](#) window opens.

Rank ↑	Name	Algorithm	Specialization	Accuracy (Optimized) Cross Validation	Enhancements	Build time
★ 1	Pipeline 7	Snap Random Forest Classifier		0.907	HPO-1	00:00:03
2	Pipeline 5	Batched Tree Ensemble Classifier (XGB Classifier)	INCR	0.906	HPO-1 FE HPO-2 BATCH	00:00:48
3	Pipeline 4	XGB Classifier		0.906	HPO-1 FE HPO-2	00:00:47
4	Pipeline 3	XGB Classifier		0.906	HPO-1 FE	00:00:34

10. From the [Model viewer](#) section on the left, click on the [Feature summary](#) item. The [Feature summary](#) is displayed, ranking features by their importance. The more important the feature, the greater the effect it has on the output of the model when it is altered.

Make a note of the important features for your model. In the screenshot below, [InterviewScore](#) and [YearsAtCurrentCompany](#) are by far the most important features; the ones in your model may differ. You will use this information later when configuring the drift V2 monitor.



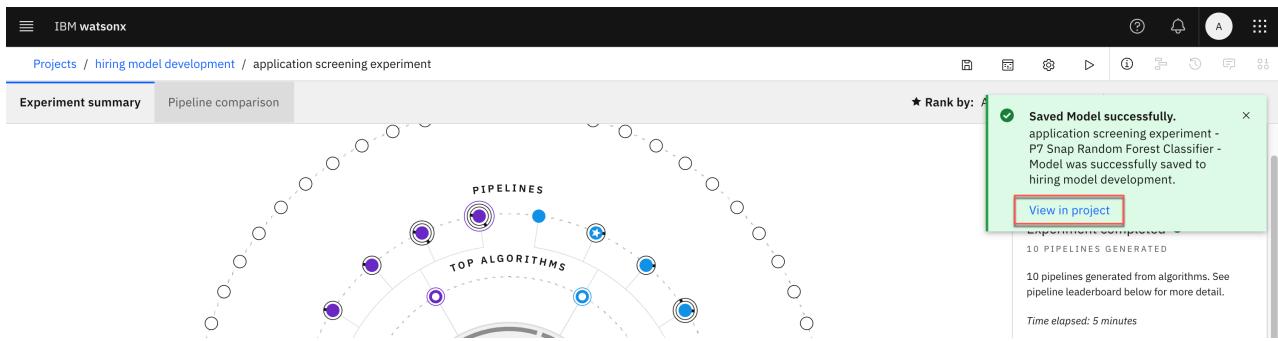
11. Click the **x** icon in the upper right of the [Pipeline details](#) window to close it.

12. From the [Pipeline leaderboard](#) table, hover your mouse over the entry with the highest accuracy score. Click on the [Save as](#) button that appears. The [Save as](#) window opens.

Rank ↑	Name	Algorithm	Specialization	Accuracy (Optimized) Cross Validation	Enhancements	Build time
★ 1	Pipeline 7	Snap Random Forest Classifier		0.907	HPO-1	00:00:03
2	Pipeline 5	Batched Tree Ensemble Classifier (XGB Classifier)	INCR	0.906	HPO-1 FE HPO-2 BATCH	00:00:48
3	Pipeline 4	XGB Classifier		0.906	HPO-1 FE HPO-2	00:00:47
4	Pipeline 3	XGB Classifier		0.906	HPO-1 FE	00:00:34

13. Click on the [Create](#) button in the bottom right to save the pipeline as a model in your project.

14. When the model finishes saving, a [Saved model successfully](#) notification will appear on your screen. Click the [View in project](#) link in the notification to go to the model information screen.



To create a Factsheet for the model, it must be tracked as part of an AI use case. Recall from the [Governing generative models](#) lab that projects and deployment spaces must first be associated with a use case.

4. Associate workspaces

You will now associate the projects and deployment spaces you created with the use case you progressed through the workflow in previous steps.

1. Click on the [navigation menu](#) (A) to open it. Click on the [AI governance](#) menu item (B) to expand it. Click on the [AI use cases](#) menu item (C) to open the use cases screen.

The screenshot shows the AI governance interface with the navigation menu expanded. The 'AI governance' section is highlighted with a red box (A), and the 'AI use cases' item under it is also highlighted with a red box (C). A red circle (B) highlights the 'AI governance' section in the main content area, which shows a 'Governance' section with a message about tracking assets and a 'Track in AI use case' button.

2. Click on the [Application screening](#) use case you created earlier in the lab. The use case screen opens.

The screenshot shows the 'AI use case' screen. At the top, it says 'AI use case' and 'Governance console integration: enabled'. Below is a search bar and a 'New AI use case' button. A table lists two use cases:

Name	Status	Owner	Inventory/Catalog	Tags	Risk level	Alerts in
Application screening	Approved	AD admin	Default Inventory		None	None
Resume summarization	Approved	AD admin	Default Inventory		High	1 dimension

3. Scroll down to the [Associated workspaces](#) section and click on the [Associate workspaces](#) button in the [Development](#) tile.

Associated workspaces

Associate your AI use case with the workspaces in order to organise them under the same business problem.

Owner admin

Status Approved

Risk level None

Inventory/Catalog Default Inventory

Tags Add tags to this AI use case.

Created by System, Sep 12, 2025
Modified by System, Sep 12, 2025

4. From the **Projects** section, check the box to the left of the [hiring model development](#) project.

5. Click on the **Save** button to save the association and close the window.

6. Click on the [Associate workspaces](#) button in the **Validation** tile.

Associated workspaces

Associate your AI use case with the workspaces in order to organise them under the same business problem.

Owner admin

Status Approved

Risk level None

Inventory/Catalog Default Inventory

Tags Add tags to this AI use case.

Created by System, Sep 12, 2025
Modified by System, Sep 12, 2025

7. From the **Space** section, check the box to the left of the [application screening development](#) space.

8. Click on the **Save** button to save the association and close the window.

9. Click on the [Associate workspaces](#) button in the **Operation** tile.

Associated workspaces

Associate your AI use case with the workspaces in order to organise them under the same business problem.

Owner admin

Status Approved

Risk level None

Inventory/Catalog Default Inventory

Tags Add tags to this AI use case.

Created by System, Sep 12, 2025
Modified by System, Sep 12, 2025

10. From the **Space** section, check the box to the left of the [application screening production](#) space.

11. Click on the **Save** button to save the association and close the window.

You have successfully associated the workspaces with the use case. You may now start tracking the model in the project.

Deploy and evaluate the model

1. Enable model tracking

1. To return to the project, click on the [open](#) icon for the project in the **Development** tile.

The screenshot shows the AI Project Overview page. On the left, there's a sidebar with 'Associated workspaces' containing three tiles: 'Development' (with 'hiring model development'), 'Validation' (with 'application screening development'), and 'Operation' (with 'application screening production'). To the right is the main content area. In the center is a circular diagram representing the AI use case. The outer ring is divided into four quadrants: 'Workspaces for Develop' (top), 'Workspaces for Validate' (right), 'Workspaces for Operate' (bottom), and 'AI use case' (center). On the right side of the main content area, there are several details about the project: Owner (admin), Status (Approved), Risk level (None), Inventory/Catalog (Default Inventory), Tags (Add tags to this AI use case), Created by (System, Sep 12, 2025), and Modified by (System, Sep 12, 2025).

2. From the **Assets** tab, click on the name of the created AutoAI model.

The screenshot shows the 'Assets' tab of the governance console. On the left, there's a sidebar with 'Asset types' categories: Data (1), Experiments (1), and Models (1). The main area lists 'All assets' with a table header: 'Name' and 'Last modified'. There are three items listed:

- application screening experiment - P7 Snap Random Forest Classifier - Model** (Machine learning model from AutoAI) - Last modified 27 minutes ago, Modified by System
- application screening experiment (AutoAI experiment) - Last modified 50 minutes ago, Modified by you
- hiring_training_data.csv (CSV) - Last modified 2 hours ago, Modified by you

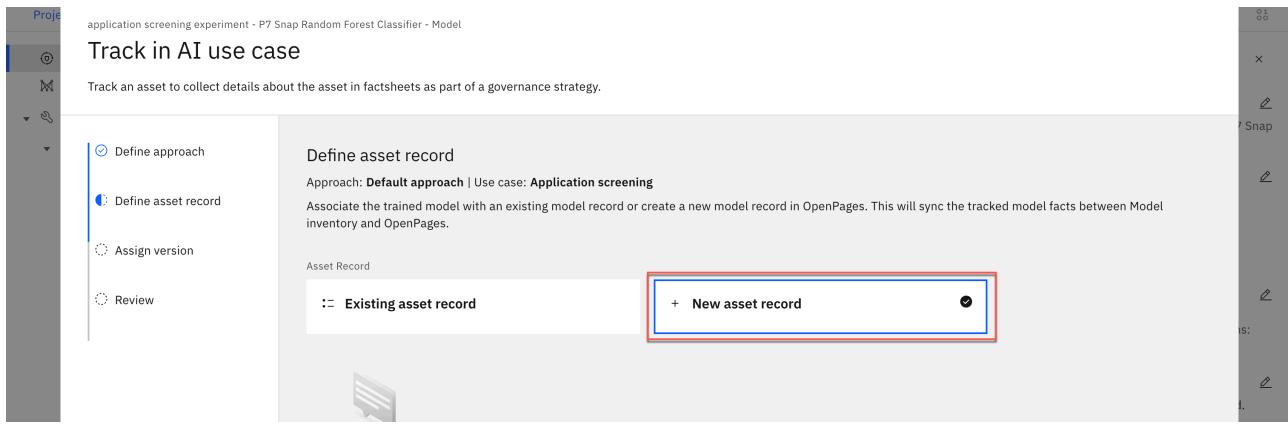
 The first item is highlighted with a red box.

3. Click on the [Track in AI use case](#) button in the **Governance** section. The [Track in AI use case](#) window opens to the [Define approach](#) screen.

The screenshot shows the 'Define approach' screen for tracking the asset. It has two main sections: 'Insert this asset' on the right and 'Governance' on the left. In the 'Governance' section, it says 'This asset is not tracked.' and 'To track an asset, add it to an AI use case. Tracking captures details about the asset for governance purposes.' A blue button labeled 'Track in AI use case' is highlighted with a red box. On the right, the 'Insert this asset' section shows the asset details:

- Name:** application screening experiment - P7 Snap Random Forest Classifier - Model
- Description:** No description provided.
- Asset Details:**
 - Type: wml-hybrid_0.1
 - Model ID: 80cd41ad-0a24-48...
 - Software specification: hybrid_0.1 (Hybrid pipeline software specifications: autoai-kb_rt25.1-py3.12)
- Tags:**

4. Click on the [Next](#) button. The [Define asset record](#) screen opens. This screen allows you to specify an existing model entry created in the governance console (OpenPages). Because you have not already created a model entry for this model, click on the tile for [New asset record](#).



5. Click the [Next](#) button. The [Assign version](#) screen opens. The version will be included in model metadata in the Factsheet.
6. Click on the [Stable](#) tile to reflect a model that the model developers are ready to have evaluated.
7. Click on the [Next](#) button. The [Review](#) screen opens.
8. Click on the [Track asset](#) button to add the model to the use case. After the model is added, the Factsheet opens, displaying governance information.

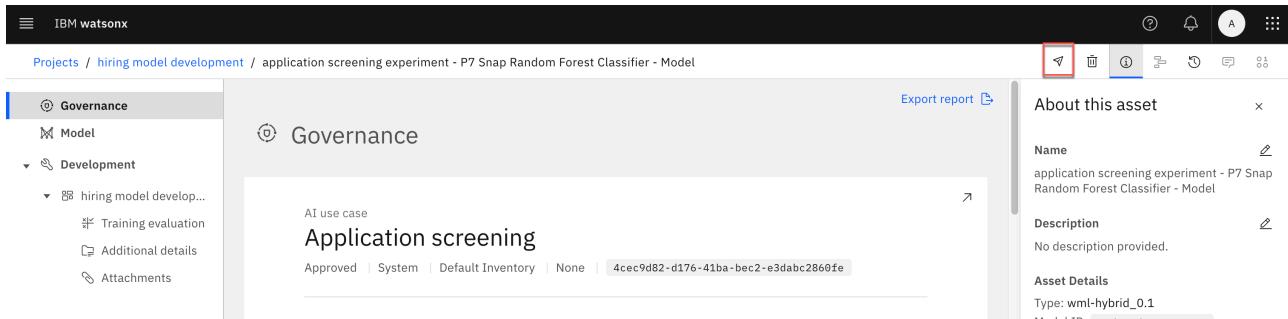
⚠ Note that you may receive an error message that the model was not reachable, or that it is already being tracked; this typically occurs if the system call to track the model takes longer than expected to return, and can typically be fixed by refreshing the screen.

2. Deploy the model

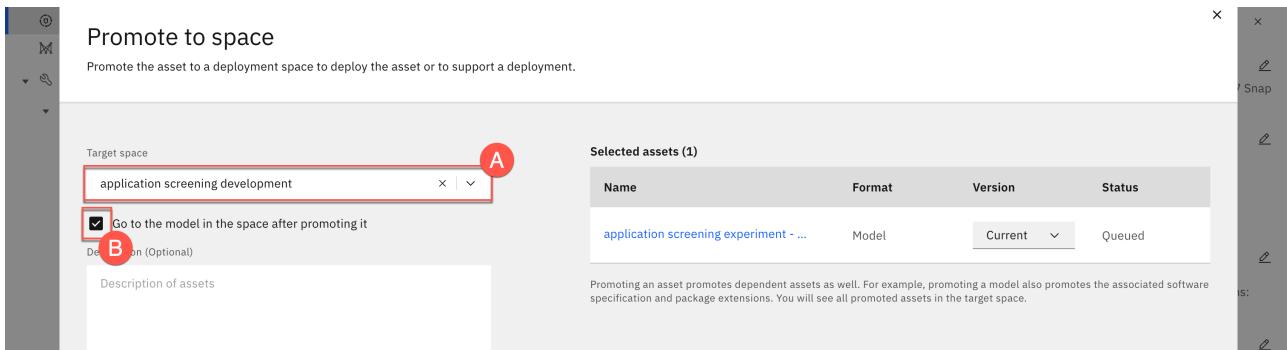
Now that the model has been added as part of the use case, the model Factsheet will start automatically collecting metadata about the model, including deployments, evaluation metrics, and more. If you wish, you can open the [Models](#) view from the inventory in the governance console to see how that data is represented there; you can also find it in the view of the [Application screening](#) use case.

Take a moment to review the information presented on the Factsheet. In the [Lifecycle](#) section, the model is shown as being in the [Develop](#) phase. You can see the model creator, the creation date, software specification, prediction type, and information on the training data features. Additionally, since the model was created in AutoAI, the initial evaluation done while training the model is available in the [Training evaluation](#) section, showing model quality features such as [Accuracy](#), [F1](#), and [Precision](#).

1. When you have finished reviewing the Factsheet, click the [Promote to space](#) button at the top of the screen. The [Promote to space](#) window opens.



2. Click on the [Target space](#) dropdown and select the [application screening development](#) deployment space you created in a previous step (A). Check the box to the left of [Go to the model in the space after promoting it](#) (B).



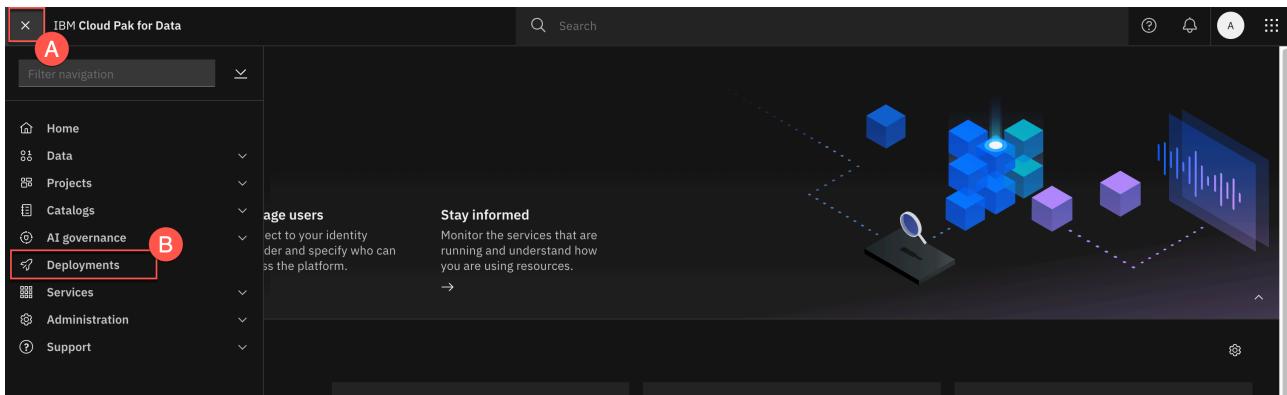
3. Click on the **Promote** button to promote the model to the space. Promoting the model can take up to a minute. When the process has finished, the deployment information screen for the model opens.
4. Click the **New deployment** button. The **Create a deployment** window opens.

5. Enter **application screening - dev** in the **Name** field.
6. Click on the **Create** button to create the deployment. The **Create a deployment** window closes. The deployment you created now shows in the list, with the **Status** field showing as **Initializing**. It may take up to ten minutes for the deployment to be ready.

⚠️ Integration between the different components of watsonx.governance is ongoing. For the next steps, you will switch the context back to the Cloud Pak for Data context. In future releases, these steps will likely be unnecessary.

7. When the **Status** field changes to **Deployed**, click on the **context** button in the upper right (A) to open the context menu. Click on the **IBM Cloud Pak for Data** menu item (B). The Cloud Pak for Data home screen opens.

8. Click on the **navigation menu** in the upper left to open it.
9. Click on the **Deployments** menu item. The **Deployments** screen opens.



10. Click on the [Spaces](#) tab (A). Click on the link for the [application screening development](#) space (B) to open it.

Name	Last modified	Your role	Collaborators	Tags	Type	Online deployments	Jobs
application screening production	Sep 14, 2025, 12:34 PM	Admin	AA		Production	0	0
application screening development	Sep 14, 2025, 12:26 PM	Admin	AA		Development	1	0
Resume summarization evaluation space	Sep 12, 2025, 10:43 AM	Admin	AA		Testing	0	0

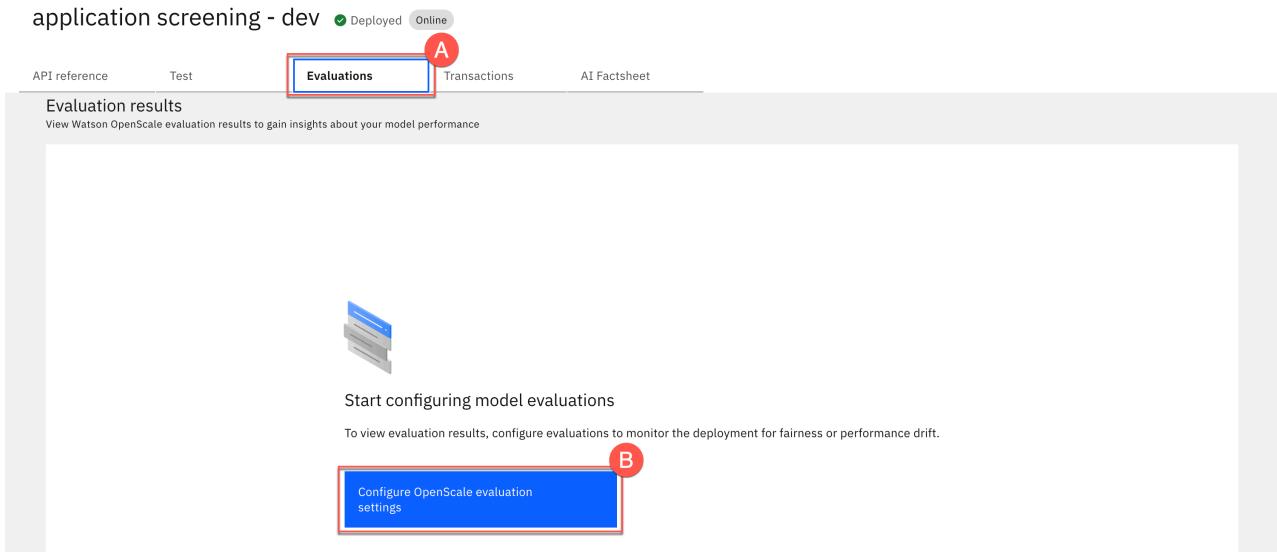
11. Click on the [Deployments](#) tab (A), then click on the link for the new deployment (B). The deployment details screen opens.

Name	Type	Status	Asset	Asset type	Tags	Last modified
application screening - dev	Online	Deployed	application screening experiment - P7 Snap Random Forest Classifier - Model	Model	Add tags +	16 minutes ago admin (You)

3. Configure evaluation settings

Models can be evaluated at any point during their lifecycle. In the next step, you will configure the evaluation settings.

1. Click on the [Evaluations](#) tab (A). Click on the [Configure OpenScale evaluation settings](#) button (B). The [Associate a service instance](#) dialog opens.



2. Click on the [Associate a service instance](#) button. The deployment space will be added as a machine learning provider for the watsonx.governance monitoring service (OpenScale). The [Prepare for evaluation](#) window opens.
3. Leave the storage settings set to their default values and click on the [View summary](#) button. The setup summary window opens.
4. Note that the summary includes metadata such as the model input data type, algorithm type, and more, which have been automatically imported from the AutoAI model you created. Click on the [Finish](#) button to create a subscription for the model in the monitoring service. The [Configure OpenScale evaluation settings](#) window opens.

⚠ If you receive an error message saying that the operation has failed, try the operation again. You may end up with extra copies of the model on the Insights dashboard in later steps, which can safely be deleted.

5. Click on the [Edit](#) icon in the [Training data](#) tile.

Model details	
Description	Provide information about the training data and deployed model output to prepare watsonx for monitoring and providing explanations for model transactions.
Reconfigure model	

Training data	
Storage type	Do not analyze

Training data label	
Label column	HIRED

6. Leave the default setup selected for the configuration method, and click on the [Next](#) button. The [Specify training data](#) screen opens.
7. Click on the [browse](#) link in the file area, and locate the [hiring_training_data.csv](#) file you downloaded to your machine when creating the model.

The screenshot shows the 'Specify training data' step in the 'Configure application screening - dev' workflow. The 'Training data option' dropdown is set to 'Upload file'. A large input field below it has a placeholder 'Drag training data here or [browse](#)' with '(8 MB size limit)' in parentheses. The 'Show less ^' link is visible in the top right corner.

8. Click on the [Select delimiter](#) dropdown and select [Comma \(,](#)).

The screenshot shows the 'Specify training data' step with the 'Select delimiter' dropdown highlighted and set to 'Comma (,)'. The 'Training data file' input field contains 'hiring_training_data.csv'. The 'Show less ^' link is visible in the top right corner.

9. Click on the [Next](#) button. The [Select the feature columns and label column](#) screen opens.

10. Verify that [HIRED](#) is correctly identified as the [Label/Target](#) and that the remaining columns are selected as [Features](#).

The screenshot shows the 'Select the feature columns and label column' step. The 'Label / Target' column for the 'HIRED' feature is checked, indicated by a red box around the checkbox. The 'Selected features' count is 18. The 'Show less ^' link is visible in the top right corner.

Features (19)	Type	Categorical	Label / Target
<input type="checkbox"/> HIRED	♂¹	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Age	♂¹	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> BusinessTravel	♂¹	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Education	♂¹	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> RelevantEducationLevel	♂¹	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> JobLevel	♂¹	<input type="checkbox"/>	<input type="checkbox"/>

11. Scroll to the bottom of the list and check the [Categorical](#) box for the [IsFemale](#) feature to denote that this feature is categorical.

<input checked="" type="checkbox"/>	TotalWorkingYears	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	PreferredSkills	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	YearsAtCurrentCompany	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	RelevantExperience	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	JobType	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	SalaryExpectation	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	IsFemale	81	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Items per page: 25 | 1 - 19 of 19 items | 1 of 1 page | < >

12. Click on the [Next](#) button. The monitoring service will send a request to the model input to determine the format of its output.
13. Verify that the [prediction](#) and [probability](#) fields have been correctly identified, and click on the [View summary](#) button.
14. Click on the [Finish](#) button to save your changes.

4. Configure explainability and fairness

Next, you will configure the explainability service and the fairness monitor.

1. Click on the [Explainability](#) item from the menu on the left (A) section. Click on the [edit icon](#) in the [Parameters](#) tile (B).

Configure OpenScale evaluation settings

application screening - dev

Evaluations

- Fairness
- Quality
- Drift v2
- Drift
- Explainability** (highlighted with a red box)
- Generative AI Quality
- Model health

Explainability

Description
Configure explainability to analyze the factors that influence your model outcomes

Local
Factors that influence a model outcome of a specific transaction

Global
Holistic factors that influence model outcomes in general.

Parameters
To select an explanation method, click the edit icon.

Controllable features
To select controllable features, click the edit icon.

Language support

2. Watsonx.governance offers two different algorithms to explain predictions: LIME (Local Interpretable Model-Agnostic explanations), and SHAP (SHapley Additive exPlanations). Click on the [Next](#) button to use the LIME method.
3. Click on the [Next](#) button to accept the default setting for perturbations per record. The [Controllable features](#) panel opens.
4. You can designate certain features of the model as controllable, and can subsequently choose to include or exclude features that you cannot control when running an analysis. Use the switches to adjust controllable features as you wish, then click on the [Save](#) button to save your choices.
5. From the [Evaluations](#) section in the left panel, click on [Fairness](#) (A). Click on the [edit icon](#) button in the [Configuration](#) tile.

The Fairness monitor checks your deployments for biases. It tracks when the model shows a tendency to provide a favorable (preferable) outcome more often for one group over another. You will specify which values represent favorable outcomes, select the features to monitor for bias (for example, Age or Sex), and specify the groups to monitor for each selected feature.

6. The [Configure manually](#) configuration type has been selected. Click on the [Next](#) button.

To monitor fairness, you need to identify favorable and unfavorable outcomes, as well as monitored and reference groups. In this particular model, **1** represents a hiring recommendation, and is a favorable outcome. **0** represents a no-hire recommendation, and is unfavorable.

7. Use the checkboxes to mark **0** as [Unfavorable](#) and **1** as [Favorable](#).

Values	Favorable	Unfavorable
0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>

8. Click on the [Next](#) button. The [Sample size](#) screen opens.

9. Enter **100** in the [Minimum sample size](#) field. This will allow you to calculate evaluations without needing more than 100 rows of data.

10. Click on the [Next](#) button. The [Metrics](#) screen opens.

Multiple metrics are available for measuring fairness. Two of them ([Disparate impact](#) and [Statistical parity difference](#)) can be calculated at runtime strictly from data being submitted to the model. The others require feedback (ground truth) data. More information on the metrics can be found in the [watsonx.governance documentation](#).

11. Click on the [Next](#) button.

12. The [standard threshold for disparate impact](#) is 80%, though it can be adjusted to meet specific requirements. Click on the [Next](#) button. The [Select the fields to monitor](#) screen opens.

13. IBM watsonx has analyzed the data and recommended different fields to monitor, including [Age](#), [TotalWorkingYears](#), and [YearsAtCurrentCompany](#). For the purposes of this lab, uncheck each of those fields.

14. Scroll down in the table on the right and check the box to the left of the **IsFemale** item.

15. Click on the **Next** button.

In this model, females are denoted with a **1** in the IsFemale feature column, while males are denoted with a **0**. Note that in a real-world example, you would use the indirect bias detection feature of `watsonx.governance`, as the gender of the applicants would be withheld from the training data.

16. Click the checkboxes to designate the **0** value (0-0 range, males) as **Reference** group and the **1** value (1-1 range, females) as the **Monitored** group.

17. Click the on **Next** button.

18. Note that you have the option to set different thresholds for each fairness monitor. Click on the **Save** button to save your fairness configuration.

5. Configure quality and drift

Next, you will configure the quality and drift monitors. Drift refers to the degradation of model performance due to changes in data or changes in relationships between input and output.

- From the **Evaluations** section on the left, click on the **Quality** item (A). Click on the **edit icon** in the **Quality thresholds** tile.

application screening - dev

Model info

- Model details
- Endpoints

Evaluations

- Fairness
- Quality** (selected)
- Drift v2
- Drift
- Explainability
- Generative AI Quality
- Model health

Quality

Description

The Quality monitor evaluates how well your model predicts accurate outcomes. It identifies when model quality declines, so you can retrain your model appropriately.

Note: The Quality metric measures the model's ability to correctly predict outcomes that match labeled data (ground truth) provided by humans. The quality metrics evaluated are standard data science statistics based on model type.

[Learn more](#)

Quality thresholds

To select quality threshold values, click the edit icon.

Lower thresholds

To select quality threshold values, click the edit icon.

Area under ROC

--

Area under PR

--

Accuracy

--

True positive rate (TPR)

2. Over a dozen quality metrics are automatically calculated by watsonx.governance. You can find more information on each of them in the [documentation](#). Click on the **Next** button to accept the default thresholds.
3. Enter **100** in the **Minimum sample size** field.
4. Click on the **Save** button to save your configuration.

5. From the **Evaluations** section on the left, click on the **Drift v2** item (A). Click on the **edit icon** in the **Compute the drift archive** tile.

application screening - dev

Model info

- Model details
- Endpoints

Evaluations

- Fairness
- Quality
- Drift v2** (selected)
- Drift
- Explainability
- Generative AI Quality
- Model health

Drift v2

Description

The Drift monitor checks if your deployments are up-to-date and behaving consistently. Model input/output data is analyzed in relation to the training/baseline data.

Compute the drift archive

To compute the drift archive, click the edit icon.

Drift thresholds

To set drift thresholds, click the edit icon.

6. Because you uploaded the training data earlier when configuring the monitors, you now have the option to let Watson OpenScale compute the necessary statistics to measure drift. Click on the **Next** button.
7. Leave the drift thresholds set to their default values. Click on the **Next** button. The **Important features** screen opens.
8. When developing the model in AutoAI, you identified the features that had the greatest impact on the model's output. In the example, those features were **InterviewScore** and **YearsAtCurrentCompany**. Locate those features in the list and check the boxes to the left of them to mark them as important.

The screenshot shows the 'Important features' section of the evaluation settings. It includes a description of how feature importance is determined, a note about SHAP configuration, and three selection methods: 'Select from list', 'Upload list', and 'Importance'. A table lists 18 features with their types and importance scores. The 'InterviewScore' checkbox is checked and highlighted with a red box.

Features (18)	Type
<input type="checkbox"/> Age	0.1
<input type="checkbox"/> BusinessTravel	0.1
<input type="checkbox"/> Education	0.1
<input checked="" type="checkbox"/> InterviewScore	0.1
<input type="checkbox"/> IsFemale	0.1
<input type="checkbox"/> JobLevel	0.1
<input type="checkbox"/> JobType	0.1

9. Once all the important features have been identified, click on the **Next** button to continue. The **Most important features** screen opens.
10. Check the box to the left of the most important feature to identify it.
11. Click on the **Next** button to continue.
12. Leave the **Minimum sample size** value set to its default and click the **Save** button. Watson OpenScale begins training the drift model in the background. This process can take up to five minutes. Once it has finished, the monitors will be fully configured and the model can be evaluated.
13. Click on the **X** button in the upper right to close the evaluation settings window.

6. Evaluate the AutoAI model

Evaluation methods in watsonx.governance differ depending on whether the models are deployed to production spaces or pre-production spaces. Production models hosted in the same environment as watsonx.governance automatically register their input and output into the watsonx.governance datamart. Third-party production models can use a REST API to write their input and output into the datamart. Pre-production models are evaluated by uploading data in comma-separated value (CSV) files.

1. Right click on the link for the [hiring_evaluation_data.csv](#) file and download it to your machine.
2. Click on the **Actions** button (A). The **Actions** menu opens. Click on the **Evaluate now** menu item (B). The **Import test data** panel opens.

The screenshot shows the 'Evaluations' tab of the application screening interface. It displays a summary of the last evaluation, including the test data set (empty), number of explanations (0), and a circular progress bar indicating 0 tests run. Below the progress bar, there are counts for tests passed (0) and failed (0). An 'Actions' dropdown menu is open at the top right, with the 'Evaluate now' option highlighted and circled in red. Other options in the menu include 'Configure monitor' and 'View model information'.

3. Click on the **Import** dropdown and select **from CSV file** (A). Click on the link (B) to browse to the [hiring_evaluation_data.csv](#) file you downloaded in step 1.

4. Click on the **Upload and evaluate** button to begin the evaluation. Note that the evaluation can take up to ten minutes to complete.
5. When the evaluation has finished, take a moment to review the results. The model has likely failed several tests. Clicking on the individual monitors provides further details.

At this point, you can find the model in the governance console and view the metrics associated with it. You may do so now if you wish. Next, you will evaluate a third-party model deployed to Amazon SageMaker.

Work with SageMaker models

One of the significant value propositions of watsonx.governance is its ability to work with third-party models. In this section of the lab, you will connect it to a predictive model running on Amazon's SageMaker's service.

1. Add the model to the dashboard

The SageMaker model will be added from the watsonx monitoring (OpenScale) insights dashboard.

1. Click on the **navigation menu** in the upper left (A) to open it. Click on the **Services** menu item (B) to expand it. Click on the **Instances** menu item (C). The **Instances** screen opens.

2. Locate and click on the **openscale-defaultinstance** item in the table.

Service instances

Work with the service instance that you have access to or create new service instances.

Last updated: 9/14/2025 4:35 PM ⓘ

Find Instances						New instance +
Name	Type	Data plane	Physical location	Created by	Created on	
cpd-database Db2 12.1.2.0-amd64	db2oltp	—	—	admin	Aug 22, 2025	
ca-metastore Db2 12.1.2.0-amd64	db2oltp	—	—	admin	Aug 20, 2025	
openscale-defaultinstance IBM Watson OpenScale	aios	—	—	admin	Aug 20, 2025	
openpagesinstance-cr OpenPages Instance	openpages	—	—	admin	Aug 20, 2025	

3. Click on the [Open](#) button. The monitoring dashboard opens. Note that there are already entries listed for the two previous models you evaluated.

As mentioned previously, there may be additional instances of the [application screening - dev](#) model on the dashboard based on network conditions as you were completing earlier steps. These duplicate instances will not have any issues showing on their tiles, and can be deleted by clicking on the [three vertical dots](#) (A) on the tile and clicking on the [Remove deployment](#) option from the context menu (B).

4. From the watsonx monitoring (OpenScale) Insights dashboard, click on the [Configure](#) button. The [System setup](#) screen opens.

5. From the [Required](#) section in the left panel, click on [Machine learning providers](#) (A). Click on the [Add machine learning provider](#) button (B).

6. Click the [Edit](#) button for the [Machine learning providers](#) to edit the provider name.

System setup

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

Required

- Database
- Machine learning providers **edit**
- Users & roles

Optional

- Metric groups
- Metric endpoints
- Batch support
- Integrations

New provider

Machine learning providers **edit**

Description **edit**

Click edit to enter provider description.

Connection

Click edit to enter the connection information.

7. Enter [SageMaker development](#) in the text field and click the [Apply](#) button.
8. Click on the [Edit](#) button in the **Connection** tile. The **Connection** panel opens.
9. Click on the [Service provider](#) dropdown. Note the different pre-built connectors available, including Microsoft Azure ML Studio and Microsoft Azure ML Service. Select [Amazon SageMaker](#) from the list.

System setup

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

Required

- Database
- Machine learning providers **edit**
- Users & roles

Optional

- Metric groups
- Metric endpoints
- Batch support
- Integrations

Machine learning providers

Connection

SageMaker development

Description

Connect to the provider where your deployed models are stored and specify if the environment is a pre-production or production environment.

Pre-production environments

Test models by uploading test data sets (csv files) and running evaluations. When the model is ready, approve it for production.

Service provider

Amazon SageMaker

Access key ID

Enter access key ID

Credential values

Enter manually

Secret access key

10. Enter your SageMaker credentials from your [TechZone reservation](#). In the **Access key ID** field (A), enter the [AWS_ACCESS_KEY_ID](#) value from your reservation. In the **Secret access key** field (B), enter the [AWS_SECRET_ACCESS_KEY](#) value from your reservation. In the **Region** field (C), enter the [Region](#) value from your reservation.

System setup

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

Required

- Database
- Machine learning providers **edit**
- Users & roles

Optional

- Metric groups
- Metric endpoints
- Batch support
- Integrations

Machine learning providers

Connection

SageMaker development

Description

Connect to the provider where your deployed models are stored and specify if the environment is a pre-production or production environment.

Pre-production environments

Test models by uploading test data sets (csv files) and running evaluations. When the model is ready, approve it for production.

Production environments

Monitor production models by logging model transactions and sending feedback (labeled test data) to Watson OpenScale for continuous evaluation.

Note that batch deployments require a custom service provider.

Service provider

Amazon SageMaker

Access key ID

AKI IN7 **A**

Credential values

Enter manually

Secret access key

***** **B**

Region

us-west-1 **C**

Environment type

Pre-production Production

11. Click on the [Save](#) button to save the SageMaker service as a machine learning provider for [watsonx.governance](#).
12. Click on the [Insights dashboard](#) button to return to the dashboard.

System setup

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

Required

- Database
- Machine learning providers **(Red Box)**
- Users & roles

Optional

- Metric groups

Machine learning providers

Description

Watson OpenScale connects to deployed models stored in a machine learning environment.

Add machine learning provider +

13. Click on the [Add to dashboard](#) button. The [Select a model deployment](#) window opens.

14. In the [Select model location](#) section, click on the [Machine learning Providers](#) button (A). A list of providers appears. Click on the [SageMaker development](#) provider from the list (B).

Select a model deployment

Choose a machine learning provider and provide deployment details.

[Select model location \[SageM...\]](#)

[Select deployed model](#)

[Select storage type](#)

Select model location

Details

To browse a list of deployments, select the deployment space or machine learning provider where the deployment is located.

Deployment spaces **Machine learning Providers** Show less ^

SageMaker development Amazon SageMaker - Pre-production A

service-provider-space-dff5fc60db-ea37-4156-9609-28df35b62c6e Watson Machine Learning application screening development Pre-production

SPACE_Resume summarization evaluation space Watson Machine Learning Resume summarization evaluation space Pre-production B

Find machine learning providers Add provider

16. Click on the [Next](#) button. The monitoring service will query the SageMaker service using the credentials you provided to get a list of deployed model endpoints.

17. Click on the [hiring-endpoint-scoring...](#) deployment from the list.

Select model location [SageM...]

[Select deployed model \[hiring...\]](#) **(Red Box)**

Select storage type

Select a deployed model

Details

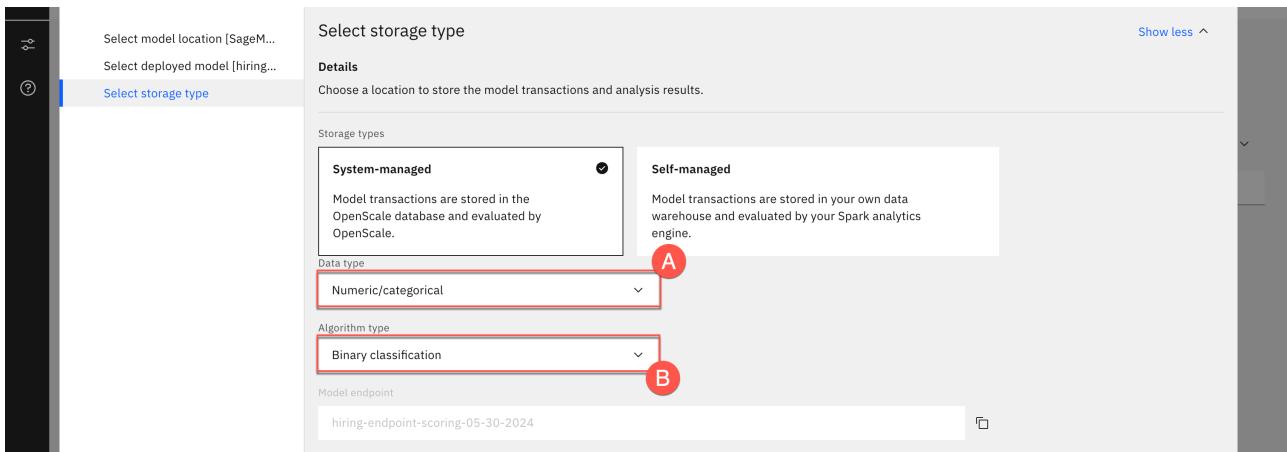
Choose a deployment from the deployment space or machine learning provider you selected.

Find Deployment Hide added models

Deployment	Description	Created	Added
Credit-risk-endpoint-2-scoring-2025-02-08-01-21		Fri, Feb 7, 2025, 6:26 PM MDT	
Credit-risk-endpoint-2-scoring-2025-02-20-18-40		Thu, Feb 20, 2025, 11:45 AM MDT	
credit-risk-endpoint-scoring-05-30-2024		Thu, May 30, 2024, 11:56 AM MDT	
Credit-risk-endpoint-scoring-2024-09-25-08-51		Wed, Sep 25, 2024, 2:55 AM MDT	
hiring-endpoint-scoring-05-30-2024		Thu, May 30, 2024, 11:54 AM MDT	

18. Click on the [Next](#) button. The [Select storage type](#) window opens.

19. Click on the [Data type](#) dropdown and select [Numeric/categorical](#) from the list (A). Click on the [Algorithm type](#) dropdown and select [Binary classification](#) from the list (B).



20. Click on the [View summary](#) button.

21. Click on the [Save and continue](#) button to add the deployed model to the dashboard. The [Configure hiring-endpoint...](#) screen opens.

2. Configure the SageMaker monitors

Next, you will configure the SageMaker model information and monitors.

1. Leave the [Configuration method](#) set to [Manual setup](#) and click on the [Next](#) button. The [Specify training data](#) window opens.
2. Click the link to browse to the [hiring_training_data.csv](#) file you downloaded to your machine earlier to train the AutoAI model. The same file was used to train the SageMaker model.
3. Click on the [Select delimiter](#) dropdown and select the [Comma \(,\)](#) option from the list.
4. Click the [Next](#) button. The monitoring service reads the CSV file. The [Select the feature columns and label column](#) screen opens.
5. Check the [Label / Target](#) box for the [HIRED](#) column (A). Check the box in the table header row (B) to select the remaining columns as features.

Features (19)	Type	Categorical	Label / Target
<input type="checkbox"/> HIRED	0:1		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Age	0:1	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> BusinessTravel	0:1	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Education	0:1	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> RelevantEducationLevel	0:1	<input type="checkbox"/>	<input type="checkbox"/>

6. Scroll to the bottom of the table and check the [Categorical](#) box for the [IsFemale](#) feature.

<input checked="" type="checkbox"/>	TotalWorkingYears	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	PreferredSkills	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	YearsAtCurrentCompany	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	RelevantExperience	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	JobType	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	SalaryExpectation	81	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	IsFemale	81	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Items per page: 25 | 1 - 19 of 19 items | 1 of 1 page | < >

7. Click on the [Next](#) button. The monitoring service queries the model to determine the structure of its output. The [Select model output](#) screen opens.

8. Check the [Prediction](#) box for the [predicted_label](#) field (A). Check the [Probability](#) box for the [score](#) field (B).

Select configuration method
Specify training data
Select features and label
Select model output

Select model output

Details
From the model output data, select the column that contains the prediction generated by the deployed model. Select the prediction probability column which contains the model's confidence in the prediction.

Select the prediction and probability column(s).

Features (2)	Type	Prediction	Probability
score	81	<input type="checkbox"/>	<input checked="" type="checkbox"/>
predicted_label	81	<input checked="" type="checkbox"/>	<input type="checkbox"/>

9. Click on the [View summary](#) button.

10. Click on the [Finish](#) button to finalize your configuration.

11. Configure the model monitors and explainability service for the SageMaker model using the same values and thresholds you used for the AutoAI model, making sure to set the minimum records required for fairness and quality scoring to [100](#).

3. Evaluate the SageMaker model

1. Return to the [Insights dashboard](#) for the monitoring service.

IBM WatsonX

System setup

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

Required

- Database
- Machine learning providers** **A**
- Users & roles

Optional

- Metric groups

Machine learning providers

Description
Watson OpenScale connects to deployed models stored in a machine learning environment.

Add machine learning provider +

2. Click on the tile for the [hiring-endpoint-scoring](#) model.

Filter by Tags ▾ Alert type ▾ Machine learning provider ▾ Sort by Severity ▾

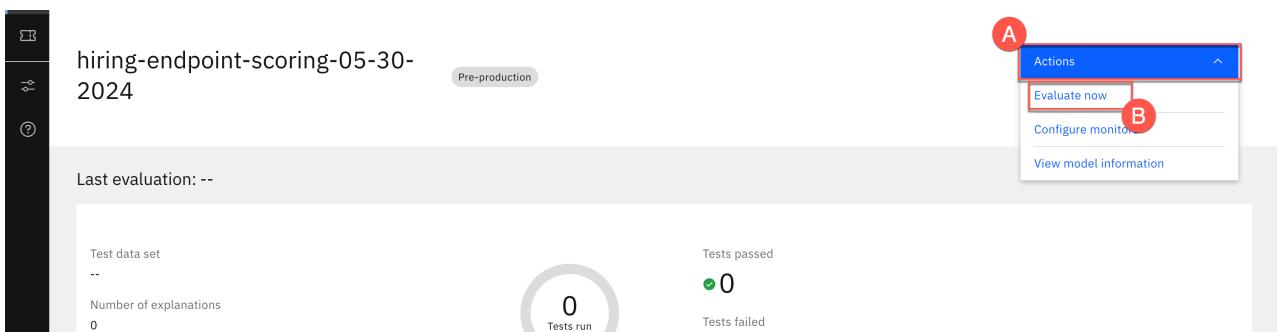
Q Which deployment are you looking for?

Service Provider Space - df5c60db-ea37-41... : application screening - dev		
Issues	Quality	5
1 9	Fairness	1
	Drift v2	3
	Drift	--
	Global explanation	--
	Custom	--
View details View metrics View report		
Evaluated 1 hour ago		

SageMaker development hiring-endpoint-scoring-05-30-2024 : Pre-production		
Issues	Quality	--
--	Fairness	--
	Drift v2	--
	Drift	--
	Global explanation	--
	Custom	--
View details View metrics View report		
Evaluation pending		

SPACE_Resume summarization evaluation : Resume summarization test deployment		
Issues	Quality	--
--	Fairness	--
	Drift v2	--
	Drift	--
	Global explanation	--
	Custom	--
View details View metrics View report		
Evaluation pending		

3. Click on the **Actions** button (A) to open the **Actions** menu. Click on **Evaluate now** (B) from the list of actions.



hirings-endpoint-scoring-05-30-2024 : Pre-production

Last evaluation: --

Test data set: --

Number of explanations: 0

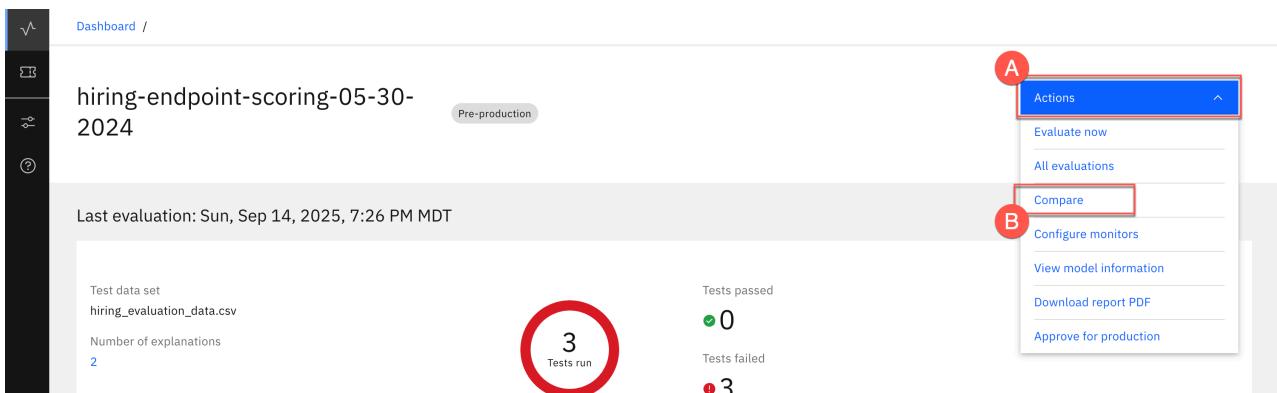
Tests passed: 0 Tests run: 0

Tests failed: 0

A Actions

- B** Evaluate now
- Configure monitors
- View model information

4. Click on the **Import** dropdown and select **from CSV file**.
5. Click the link to browse to the [hirings_evaluation_data.csv](#) file you used to evaluate the AutoAI model.
6. Click on the **Upload and evaluate** button to begin the evaluation. Note that the evaluation can take up to ten minutes to complete. When the evaluation has finished, take a moment to review the results.
7. To compare the evaluations for this model with the AutoAI model, click on the **Actions** button (A) to open the menu, then click on the **Compare** menu option (B). The **Compare a model** panel opens.



Dashboard / hirings-endpoint-scoring-05-30-2024 : Pre-production

Last evaluation: Sun, Sep 14, 2025, 7:26 PM MDT

Test data set: hirings_evaluation_data.csv

Number of explanations: 2

Tests passed: 0 Tests run: 3

Tests failed: 3

A Actions

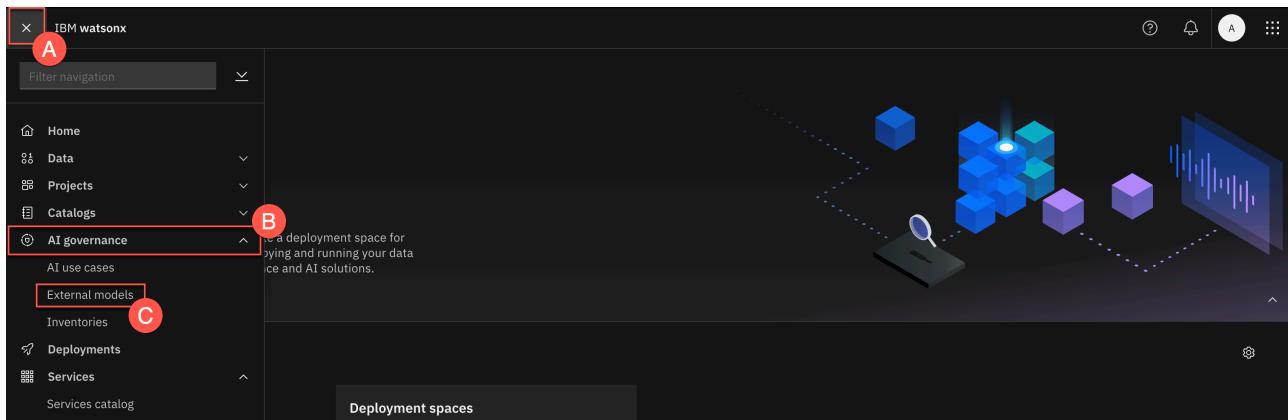
- Evaluate now
- All evaluations
- B** Compare
- Configure monitors
- View model information
- Download report PDF
- Approve for production

8. Click on the **Select a model** dropdown and select the **application screening - dev** model from the list. A side-by-side comparison of the gathered metrics loads, allowing you to directly compare the two models.

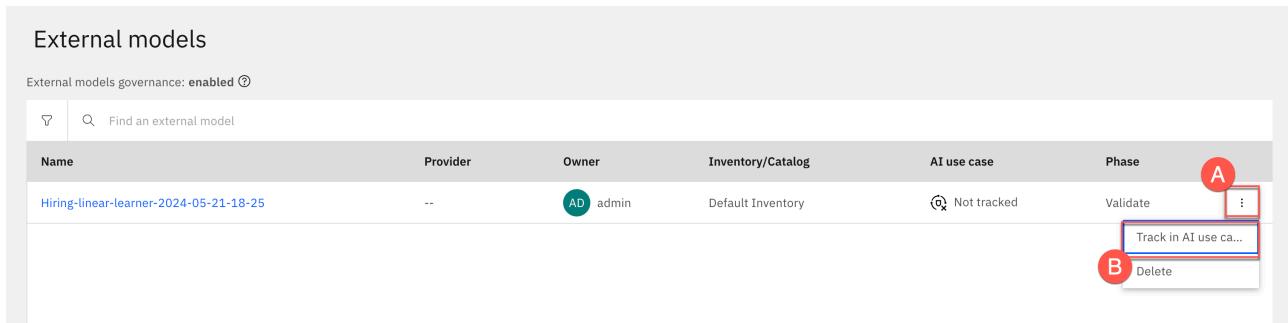
4. Link the SageMaker model to the use case

Now that the SageMaker model has been evaluated, it will appear in the **External models** page found in the **AI governance** menu.

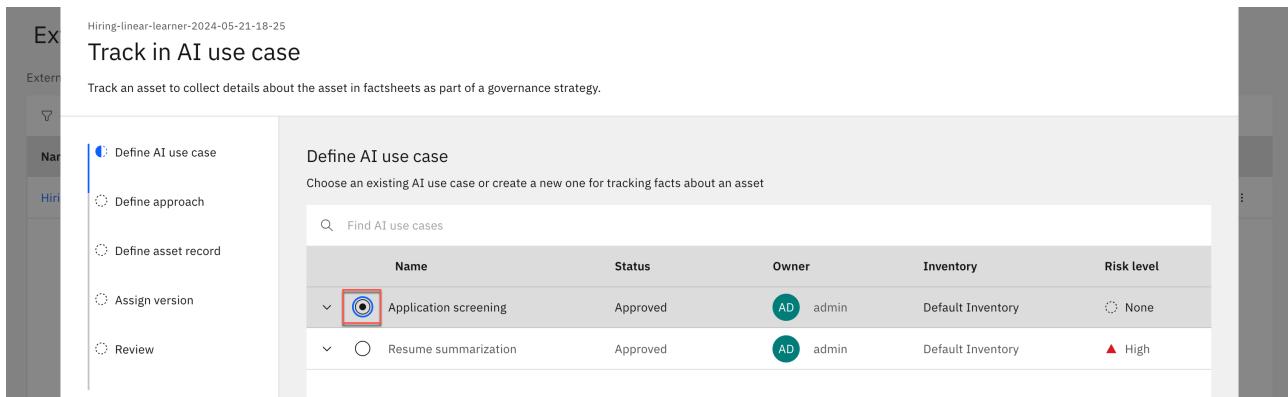
1. Return to the Cloud Pak for Data home screen. The quickest way to do this is to edit the URL in your web browser, removing everything starting with *aiopenscale* in the URL.
2. Click on the **navigation menu** in the upper left (A). Click on the **AI governance** menu item (B) to expand it. Click on the **External models** menu item (C). The **External models** screen opens.



3. Locate the external hiring model in the list and click on the **three vertical dots** to the right of the model (A). The context menu opens. Click on the **Track in AI use case** menu item (B) from the context menu. The **Track in AI use case** window opens.



4. Locate the **Application screening** use case in the list and check the circle to the left of the use case name to select it.



5. Click on the **Next** button. The **Define approach** window opens.
6. Click on the **Next** button to accept the default approach. The **Define asset record** window opens.
7. Click on the **New asset record** tile to create a new record for the model in the inventory and the governance console.

Hiring-linear-learner-2024-05-21-18-25

Track in AI use case

Track an asset to collect details about the asset in factsheets as part of a governance strategy.

Navigation

- Define AI use case
- Define approach
- Define asset record**
- Assign version
- Review

Define asset record

Approach: Default approach | Use case: Application screening

Associate the trained model with an existing model record or create a new model record in OpenPages. This will sync the tracked model facts between Model inventory and OpenPages.

Asset Record

+ Existing asset record + New asset record

8. Click on the [Next](#) button. The [Assign version](#) window opens.

The versions listed here refer to there already being a model defined for this particular use case; the AutoAI version of the model was created as version 1.0.0. Therefore, this model is seen as an iteration on the AutoAI model, with version numbers changing to reflect that. Choose the version change as desired or leave it set to [Patch change](#).

9. Click on the [Next](#) button. The [Review](#) window opens.

10. Click on the [Track asset](#) button to begin tracking the asset in the use case.

5. View the model metrics in the use case

1. Click on the [navigation menu](#) in the upper left (A) to open it. Click on the [Services](#) menu item (B) to expand it. Click on the [Instances](#) menu item (C). The [Instances](#) screen opens.

IBM watsonx

A

Filter navigation

- Home
- Data
- Projects
- Catalogs
- AI governance
- Deployments
- Services**
- Instances
- Administration
- Support

B

C

Default to open tasks in

Once you create a sandbox project or migrate projects, you will be able to open a task directly in your project and start working.

Start chatting... Open Prompt Lab

Tune a foundation model with labeled data

Define AI use case and requirements

with Tuning Studio with Governance console

Collapse ^

2. From the [Instances](#) list, locate and click on the [OpenPages](#) instance.

Service instances

Last updated: 9/9/2025 9:27 AM

Work with the service instance that you have access to or create new service instances.

Name	Type	Data plane	Physical location	Created by	Created on
cpd-database	db2oltp	—	—	admin	Aug 22, 2025
ca-metastore	db2oltp	—	—	admin	Aug 20, 2025
openscale-defaultinstance	aios	—	—	admin	Aug 20, 2025
openpagesinstance-cr	openpages	—	—	admin	Aug 20, 2025

3. Scroll down to the [Access information](#) section of the screen and click on the [Launch](#) icon to launch the watsonx governance console (OpenPages).

Access information		Database configuration	
URL	https://cpd-cpd.apps.68a5d160358f0f4c45d66d6e.ap1.techzone.ibm.com/openpages-openpagesinstance-cr/	Copy	Copy
Size			
Size	Small - 8 vCPUs - supports up to 75 concurrent users	Node label	ocs-storagecluster-ceph-rbd
		Data storage class	ocs-storagecluster-cephfs
		Metadata storage class	ocs-storagecluster-cephfs
		Backup storage class	ocs-storagecluster-cephfs
		Database secret name	Dh2
		Database	

4. Click on the **primary menu** button (A) to open it. Click on the **Inventory** menu item (B) to expand it. Click on the **Use Cases** menu item (C). The **Use Cases** tab opens.

The screenshot shows the IBM Watsonx Governance console interface. A red circle labeled 'A' highlights the primary menu icon in the top-left corner. A red circle labeled 'B' highlights the 'Inventory' menu item under the 'Technology' section of the expanded primary menu. A red circle labeled 'C' highlights the 'Use Cases' menu item under the 'Inventory' section. The main content area displays a table of use cases, with one row selected. The table columns include Status, Risk Level, Actions, Stage, Due Date, and Tags.

5. Click on the **Application screening** use case from the list.

6. Scroll down to the **Performance Monitoring** section. Note that the metrics for both models are combined here, organized into breach status for major categories such as quality, fairness and more. You can explore the metrics in detail, clicking into each to find more information.

⚠️ Note that you can also view the model metrics, and the updates made to the model lifecycle, in the model Factsheet. The Factsheet can be found in the [AI use cases](#) page of the [AI governance](#) section of Cloud Pak for Data.

Metrics data is generated by the watsonx.governance monitoring service (OpenScale), and automatically written to the Factsheet, then automatically updated in the governance console. In this way, data is always kept in sync and stakeholders automatically receive the most current information in the format that is most useful for them.

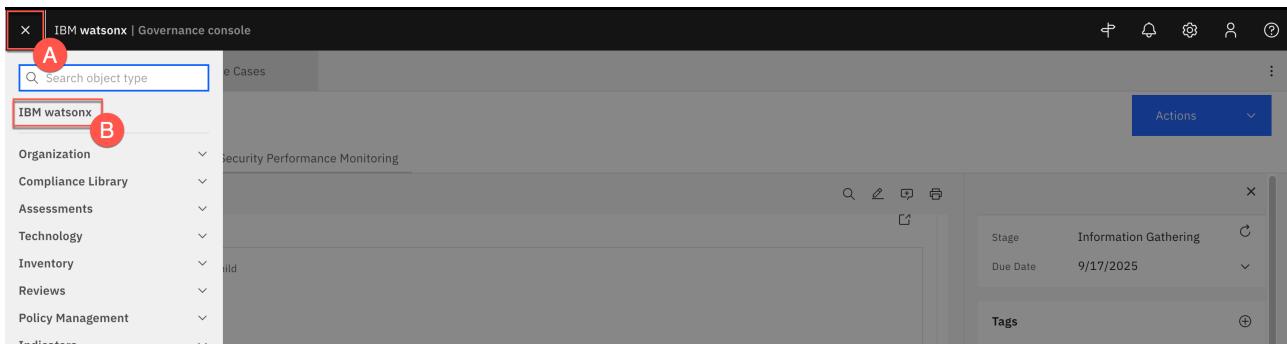
Governing models in production

To this point, the hands-on labs have focused on models in the development and validation stages. This next section of the lab will discuss promoting models to the production stage, and demonstrate how their evaluations differ.

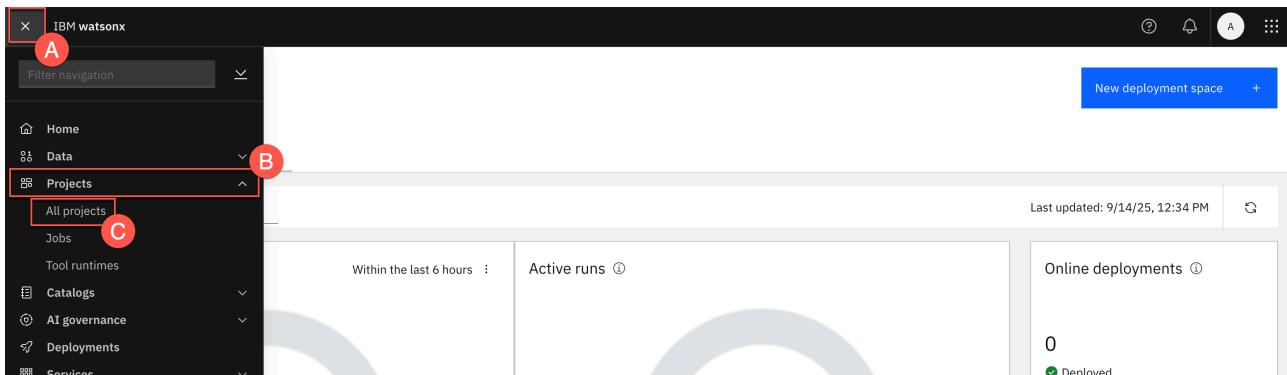
1. Promote the AI model to production

In this section, you will promote the AutoAI-created model to a production deployment space to see how this change is reflected in the model lifecycle and how it affects the appearance and calculations of metrics data.

1. Return to the Cloud Pak for Data / watsonx home screen by clicking on the **primary menu** (A), then clicking on the **IBM watsonx** menu item.

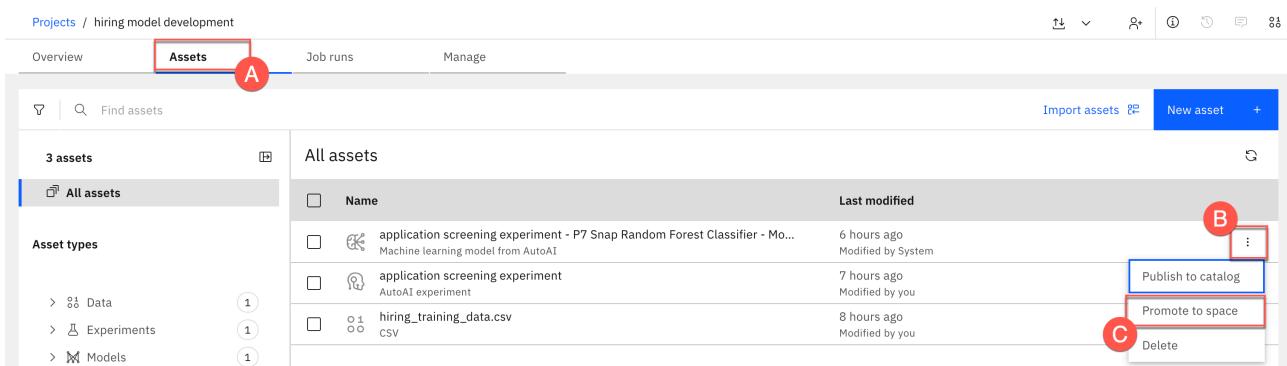


- Click on the **Navigation menu** in the upper left (A). Click on the **Projects** menu item (B) to open it. Click on the **All projects** menu item (C). The **Projects** screen opens.

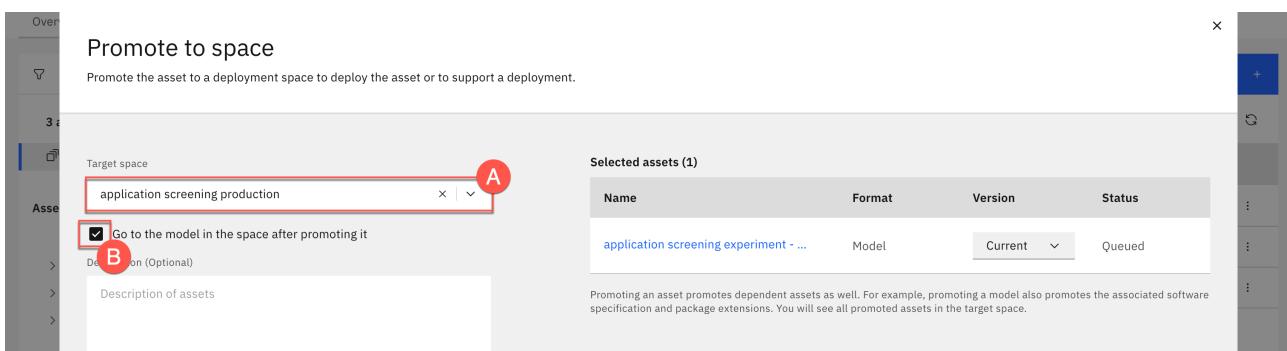


- From the list of projects, click on the **hiring model development** project. The project information screen opens.

- Click on the **Assets** tab (A) to open it. Click on the **three vertical dots** to the right of the application screening... model (B) to open the context menu. Click on the **Promote to space** menu item (C). The **Promote to space** window opens.



- Click on the **Target space** dropdown and select the **application screening production** space (A) you created earlier in the lab. Check the box to the left of **Go to the model in the space after promoting it** (B).



6. Click on the **Promote** button to promote the model to the space. Promoting the model can take up to five minutes. When the process has finished, the deployment information screen for the model opens.
7. Click the **New deployment** button. The **Create a deployment** window opens.
8. Enter **application screening - production** in the **Name** field.
9. Click the **Create** button to create the deployment. The **Create a deployment** window closes. The deployment you created now shows in the list, with the **Status** field showing as **Initializing**. It may take up to ten minutes for the deployment to be ready.
10. When the **Status** field changes to **Deployed**, click on the link for the deployment name. The deployment information screen opens to the **API reference** tab.

The screenshot shows the IBM Watson Studio interface. On the left, there's a navigation bar with 'Deployments' selected. Below it is a table with columns: Name, Type, Status, Tags, and Last modified. A row for 'application screening - production' is selected, showing 'Online' under Type, 'Deployed' under Status, and '37 seconds ago admin (You)' under Last modified. To the right, there's a sidebar titled 'About this asset' with sections for Name (application screening experiment - P7 Snap Random Forest Classifier - Model), Description (No description provided), and Asset Details (Type: wml-hybrid_0.1, Model ID: 2c24fe16-72b5-49...). A 'New deployment' button is visible at the top of the main list area.

11. Click on the text value for the **Deployment ID** value in the information panel on the right to copy it to your clipboard. Paste the value into a text file. You will use this value in upcoming steps in a Jupyter notebook as the **DEPLOYMENT_ID** value.

The screenshot shows the 'API reference' tab for the deployment 'application screening - production'. It displays the 'Endpoints for inferencing' section with an Endpoint URL: <https://cpd-cpd.apps.68a5d160358f0f4c45d66d6e.ap1.techzone.ibm.com/ml/v4/deployments/bf21fa51-f168-4ce9-9bb0-5d2add7ca964/predictions?vers>. To the right, there's an 'About this deployment' panel with sections for Name (application screening - production), Description (No description provided), and Deployment Details (Deployment ID: bf21fa51-f168-4c..., Serving name: No serving name, Software specification: hybrid_0.1, Hybrid pipeline software specifications: autoai-kb_rt25.1-py3.12).

12. Click on the **application screening production** link at the top of the screen.

The screenshot shows the IBM Watson Studio interface. At the top, there's a navigation bar with 'IBM Watsonx' and a breadcrumb path: 'Deployments / application screening production / application screening experiment - P7 Snap Random Forest Classifier - Model /'. Below it is a table with columns: Name, Type, Status, Tags, and Last modified. A row for 'application screening - production' is selected, showing 'Online' under Type, 'Deployed' under Status, and '37 seconds ago admin (You)' under Last modified. To the right, there's a sidebar titled 'About this deployment' with sections for Name (application screening - production), Description (No description provided), and Deployment Details (Deployment ID: bf21fa51-f168-4c..., Serving name: No serving name, Software specification: hybrid_0.1).

13. Click on the **Manage** tab (A). Click on the **Copy** icon for the **Space GUID** value (B) to copy it to your clipboard. Paste the value into your text file. You will use this value in upcoming steps in a Jupyter notebook as the **SPACE_GUID** value.

The model has now been deployed to a production deployment space. In the next step, you will configure monitoring for a production model.

2. Configure production monitoring

Now that the model has been deployed to a production space, you can configure it to be monitored as if it were in a production environment. For models in production environments, watsonx.governance records all input and output data of the model in a datamart, which is a set of tables in the Db2 database you configured for the monitoring service (OpenScale) in the environment configuration lab.

For IBM models hosted in the same environment as your watsonx.governance services (in this case, the AutoAI hiring model), that data is automatically written to the datamart without any further effort or code required. For third-party models or IBM models hosted in other environments (the SageMaker hiring model, the Azure and watsonx resume summarization models) that data must be written to the datamart using API calls.

Additionally, for production environments, the monitoring service will automatically run at timed intervals to take evaluations. Fairness and quality are evaluated hourly, and drift is evaluated every three hours.

Disparate impact (fairness) and drift are computed based on the model input and output, and do not require additional ground truth feedback data. Quality **does** require the upload of additional ground truth feedback data.

1. Return to the watsonx.governance monitoring service (OpenScale) Insights dashboard. Recall that it can be found from the [Instances](#) item in the [Services](#) section of the Cloud Pak for Data home page menu.
2. Click on the [Configure](#) button on the left.

Deployments Monitored	Quality Alerts	Fairness Alerts	Drift v2 Alerts	Drift Alerts	Global explanation Alerts	Custom Alerts
2	5	1	3	--	--	--

3. Click on the [Machine learning providers](#) item in the menu on the left.
4. Click on the [Add machine learning provider](#) button.

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

Required

- Database
- Machine learning providers **A**
- Users & roles

Optional

- Metric groups
- Metric endpoints
- Batch support
- Integrations

Machine learning providers

Description Watson OpenScale connects to deployed models stored in a machine learning environment.

Watson Machine Learning service-provider-space-...

Watson Machine Learning SPACE_Resume summar...

Add machine learning provider +

5. Click on the [Edit icon](#) for the **Machine learning providers**.

6. Enter [application screening production space](#) in the name field and click the [Apply](#) button.

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

Required

- Database
- Machine learning providers **application screening production space**
- Users & roles

Optional

- Metric groups
- Metric endpoints
- Batch support
- Integrations

[Back to all providers](#)

Machine learning providers

Application screening production space

Apply Cancel

Description Click edit to enter provider description.

Connection
Click edit to enter the connection information.

7. Click on the [Edit button](#) in the **Connection** tile. The **Connection** window opens.

8. Click on the [Service provider](#) dropdown and select [Watson Machine Learning \(V2\)](#) (A). Click on the [Location](#) dropdown and select [Local](#) (B). Click on the [Deployment space](#) dropdown and select the [application screening production](#) space (C) you created in a previous step. Use the radio button to select the [Production](#) setting (D) for [Environment type](#).

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

Required

- Database
- Machine learning providers **Connection**
application screening production space
- Users & roles

Optional

- Metric groups
- Metric endpoints
- Batch support
- Integrations

Machine learning providers

Connection
application screening production space

Description Connect to the provider where your deployed models are stored and specify if the environment is a pre-production or production environment.

Pre-production environments
Test models by uploading test data sets (csv files) and running evaluations. When the model is ready, approve it for production.

Production environments
Monitor production models by logging model transactions and sending feedback (labeled test data) to Watson OpenScale for continuous evaluation.

Note that batch deployments require a custom service provider.

Service provider **A**
Watson Machine Learning (V2)

Location **B**
Local

Deployment space **C**
application screening production

Environment type
 Pre-production Production **D**

9. Click on the [Save](#) button to save the deployment space as a machine learning provider.

10. Return to the [Insights dashboard](#) by clicking the button in the upper left.

11. Click on the [Add to dashboard](#) button in the upper right.

12. Use the radio button to select the [application screening production](#) deployment space from either the [Deployment spaces](#) list or the [Machine learning providers](#) list.

Select model location

Details

To browse a list of deployments, select the deployment space or machine learning provider where the deployment is located.

Deployment spaces Machine learning Providers

Name Environment type Machine learning provider name

<input type="radio"/> application screening development	Pre-production	service-provider-space- <code>df5c60db-ea37-4156-9609-28df35b62c6e</code>
<input checked="" type="radio"/> application screening production	Production	application screening production space
<input type="radio"/> Resume summarization evaluation space	Pre-production	SPACE_Resume summarization evaluation space

13. Click on the [Next](#) button. The [Select a deployed model](#) screen opens.

14. Use the radio button to select the [application screening - production](#) deployment.

15. Click on the [Next](#) button. The [Select storage type](#) screen opens.

Because you have already configured monitoring for the pre-production version of this model, you can import those settings without having to re-enter all of them.

16. Check the [Import settings](#) box.

Select a model deployment

Choose a machine learning provider and provide deployment details.

Select model location [appli... Select deployed model [appli... Select storage type Import settings

Select storage type

Details

Choose a location to store the model transactions and analysis results.

Import settings

17. Click on the [Next](#) button. The [Select pre-production deployment](#) screen opens.

18. Use the radio button to select the [application screening - dev](#) deployment.

Select a model deployment

Choose a machine learning provider and provide deployment details.

Select model location [appli... Select deployed model [appli... Select storage type Import settings

Select pre-production deployment

Details

Choose the pre-production deployment that you want to import the settings from.

Name Machine learning provider Description

<input type="radio"/> hiring-endpoint-scoring-05-30-2024	SageMaker development	
<input checked="" type="radio"/> application screening - dev	service-provider-space- <code>df5c60db-ea37-4156-9609-28df35b62c6e</code> ...	

19. Click on the [View summary](#) button. The configuration settings for the model appear.

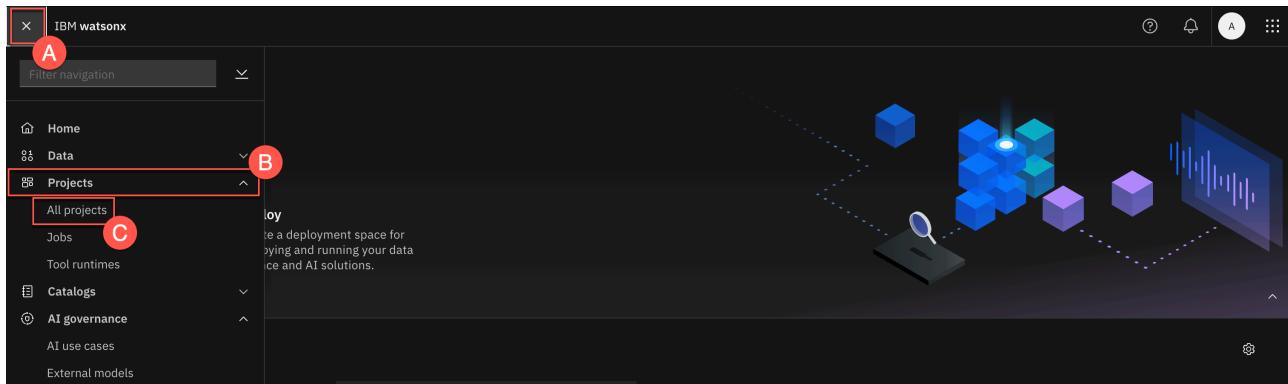
20. Click on the [Finish](#) button to complete the monitoring configuration.

3. Feed data to the model

Because IBM-hosted production models log data directly into the datamart from requests received by the model, you will need to send actual scoring requests to the model to trigger the evaluations. In this step, you will run a Jupyter notebook to feed data to the model.

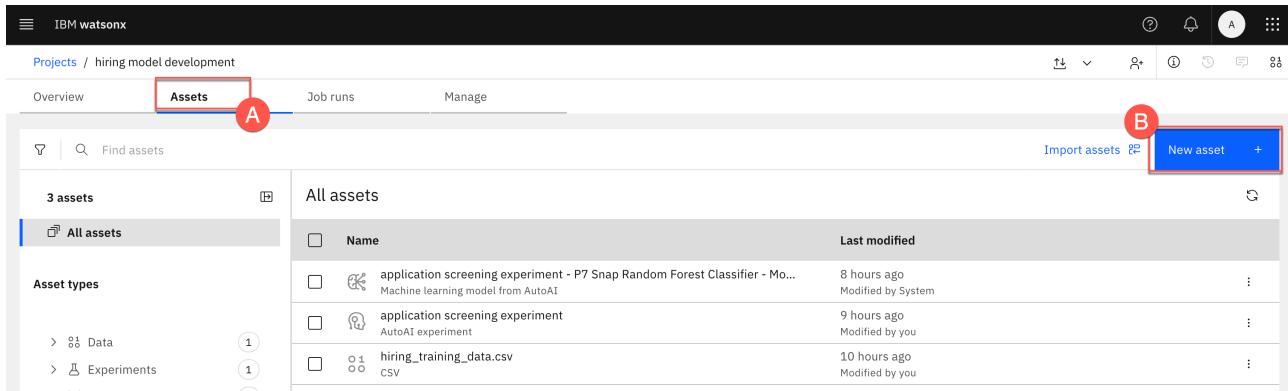
1. Return to the Cloud Pak for Data / watsonx home screen. The quickest way to do this is to edit the URL in your web browser, removing everything starting with *aiopenscale* in the URL.

2. Click on the **navigation menu** in the upper left (A). Click on the **Projects** menu item (B) to expand it. Click on the **All projects** menu item (C). The **Projects** screen opens.



3. Click on the **hiring model development** project from the list to open it.

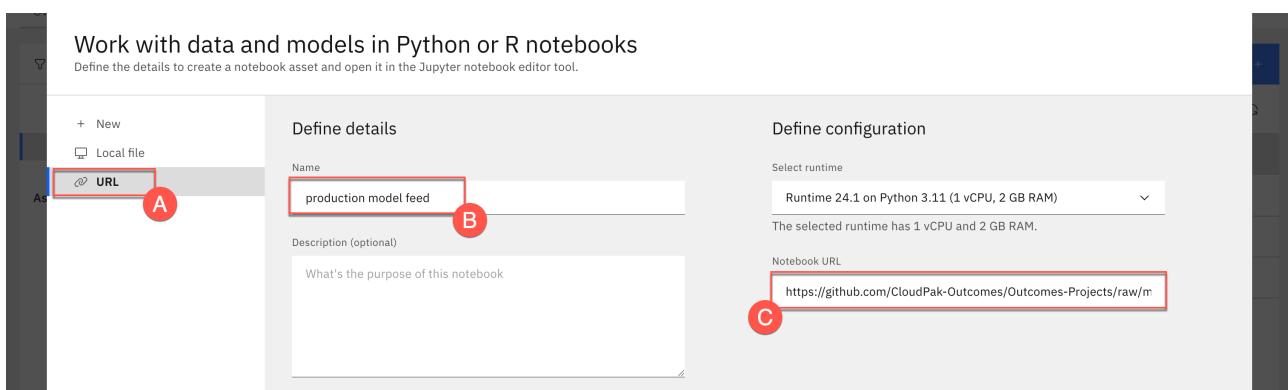
4. Click on the **Assets** tab (A) to open it. Click on the **New asset** button (B). The **New asset** window opens.



5. Enter "Jupyter" in the search bar and click on the tile for **Work with data and models in Python or R notebooks**.

6. Click on the **URL** option from the panel on the left (A). Enter **production model feed** into the **Name** field (B). Copy and paste the following URL into the **Notebook URL** field (C):

```
https://github.com/CloudPak-Outcomes/Outcomes-Projects/raw/main/watsonx-governance-14-deploy/governance/production_model_feed.ipynb
```



7. Click on the **Create** button to create the notebook.

8. Update the values in the first code cell.

- The **PASSWORD** value will be the administrator password for the Cloud Pak for Data environment.

- The **DEPLOYMENT_ID** and **SPACE_GUID** values are the ones you obtained in the step in which you promoted the model to a production deployment space.
- **RECORDS_TO_SCORE** is the number of requests that will be sent to the model, and must be greater than or equal to the minimum number of records required for **Fairness** and **Drift** evaluations you configured when setting up the model monitoring.

9. Run the notebook, examining what the cells are doing. Note that this notebook can be configured as a scheduled job to continually feed data to the model for demo purposes.

Once the notebook has finished, the model's datamart payload log will have enough data to perform fairness and drift evaluations. Those evaluations will run at regularly-scheduled intervals, or you can kick them off manually using the [Evaluate now](#) menu item from the [Actions](#) menu in the watsonx monitoring service (OpenScale) screen for the model. You can also upload the evaluation data you used for the pre-production models if you would like to calculate model quality.

Take a moment to view the model Factsheets and observe the updates to the model's lifecycle, as well as changes in the governance console.

Conclusion

Congratulations, you have completed the Governing Predictive Models hands-on lab. In this lab, you saw how the configurations you performed in previous labs control the approval process for a model use case. You then oversaw the model lifecycle, including metrics gathering, for predictive models developed in the local watsonx environment as well as an Amazon SageMaker environment. You saw how the metrics evaluations of those models were automatically updated in multiple platforms, from Factsheets to the governance console, to provide the right information to the right stakeholder at the right time without any additional effort from data science teams, or any reliance on manual processes.

Your feedback is essential to the improvement of this course. Please feel free to provide that on the course page, or directly to the course author. Thank you for your time, and happy selling.

Troubleshooting

The following issues may appear as you run through the lab. This section will grow over time based on user feedback.

1. Governance console Save button disabled

When editing entities in the governance console, occasionally the [Save](#) button will be disabled. The most common cause is that some relevant information in the form is missing, which may or may not be called out in the progress panel on the right. Ensure that all required fields (denoted with a red asterisk) have been filled out.

2. Governance console errors

Occasionally, creating new entities or altering existing ones may result in network errors when attempting to save.

In most cases, re-trying the action will resolve the problem. In some cases when creating a new entity, you will receive an error stating that the entity already exists, in which case it likely saved successfully.

Typically, the object has been created successfully, but the action took longer than expected, which generated the failure message. In these cases, you can ignore the message and proceed. In rare cases, you

will need to delete and then re-create the entity.

3. Requested operation could not be completed in the governance console

The most frequent cause of this error is incorrectly persisted browser session information when switching between the admin user and the created user in the governance console. For this reason, it is **HIGHLY RECOMMENDED** that you use your browser's private/incognito mode when signing in as the created user.