

Cloudera DataFlow

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ReadyFlow: S3 to IBM watsonx

You can use the S3 to IBM watsonx ReadyFlow to retrieve text files from a source S3 location and use IBM watsonx to summarize the text, then write the LLM response to a destination S3 location.

This ReadyFlow consumes text data from a source S3 location and invokes a large language model in IBM watsonx.ai to summarize the input data. The response from the model is written to a destination S3 location. The default LLM is `ibm/granite-13b-chat-v1`, but the LLM and its attributes can be changed via the IBM watsonx Model Input parameter. An IBM Project ID and IBM Cloud API Key are required to run this flow. Define a KPI on the `failure_WriteS3` connection to monitor failed write operations.



Note: This ReadyFlow leverages CDP's centralized access control for cloud storage access. Make sure to either set up an IDBroker mapping or Ranger policies when using fine-grained object store access allowing your workload user access to the source and destination S3 locations.

S3 to IBM watsonx ReadyFlow details	
Source	CDP managed Amazon S3
Source Format	Text
Destination	watsonx + CDP managed Amazon S3
Destination Format	Text

Prerequisites

Learn how to collect the information you need to deploy the S3 to IBM watsonx ReadyFlow, and meet other prerequisites.

For your data ingest source

- You have the source S3 bucket and path.

- You have performed one of the following to configure access to the source S3 bucket:

- You have configured access to the S3 bucket with a RAZ enabled environment.

It is a best practice to enable RAZ to control access to your object store buckets. This allows you to use your CDP credentials to access S3 buckets, increases auditability, and makes object store data ingest workflows portable across cloud providers.

- Ensure that Fine-grained access control is enabled for your DataFlow environment.
- From the Ranger UI, navigate to the S3 repository.
- Create a policy to govern access to the S3 bucket and path used in your ingest workflow.



Tip:

The Path field must begin with a forward slash (/).

- Add the machine user that you have created for your ingest workflow to the policy you just created.

For more information, see *Creating Ranger policy to use in RAZ-enabled AWS environment*.

- You have configured access to the S3 bucket using ID Broker mapping.

If your environment is not RAZ-enabled, you can configure access to the S3 bucket using ID Broker mapping.

- Access IDBroker mappings.
 - To access IDBroker mappings in your environment, click **Actions Manage Access**.
 - Choose the IDBroker Mappings tab where you can provide mappings for users or groups and click **Edit**.
- Add your CDP Workload User and the corresponding AWS role that provides write access to your folder in your S3 bucket to the **Current Mappings** section by clicking the blue + sign.



Note: You can get the AWS IAM role ARN from the Roles Summary page in AWS and can copy it into the IDBroker role field. The selected AWS IAM role must have a trust policy allowing IDBroker to assume this role.

- Click **Save and Sync**.

For DataFlow

- You have enabled DataFlow for an environment.

For information on how to enable DataFlow for an environment, see [Enabling DataFlow for an Environment](#).

- You have created a Machine User to use as the CDP Workload User.
- You have given the CDP Workload User the EnvironmentUser role.

- From the Management Console, go to the environment for which DataFlow is enabled.
- From the Actions drop down, click **Manage Access**.
- Identify the user you want to use as a Workload User.





Note:

The CDP Workload User can be a machine user or your own user name. It is best practice to create a dedicated Machine user for this.

- Give that user EnvironmentUser role.
- You have synchronized your user to the CDP Public Cloud environment that you enabled for DataFlow.

For information on how to synchronize your user to FreeIPA, see [Performing User Sync](#).

- You have granted your CDP user the DFCatalogAdmin and DFFlowAdmin roles to enable your user to add the ReadyFlow to the Catalog and deploy the flow definition.
 1. Give a user permission to add the ReadyFlow to the Catalog.
 - a. From the Management Console, click User Management.
 - b. Enter the name of the user or group you wish to authorize in the Search field.
 - c. Select the user or group from the list that displays.
 - d. Click Roles Update Roles .
 - e. From Update Roles, select DFCatalogAdmin and click Update.
 **Note:** If the ReadyFlow is already in the Catalog, then you can give your user just the DFCatalogViewer role.
 2. Give your user or group permission to deploy flow definitions.
 - a. From the Management Console, click Environments to display the Environment List page.
 - b. Select the environment to which you want your user or group to deploy flow definitions.
 - c. Click Actions Manage Access to display the Environment Access page.
 - d. Enter the name of your user or group you wish to authorize in the Search field.
 - e. Select your user or group and click Update Roles.
 - f. Select DFFlowAdmin from the list of roles.
 - g. Click Update Roles.
 3. Give your user or group access to the Project where the ReadyFlow will be deployed.
 - a. Go to DataFlow Projects .
 - b. Select the project where you want to manage access rights and click  More Manage Access .
 4. Start typing the name of the user or group you want to add and select them from the list.
 5. Select the Resource Roles you want to grant.
 6. Click Update Roles.
 7. Click Synchronize Users.

For your data ingest targets

- You have the IBM Project ID and IBM Cloud API Key.

- You have the destination S3 bucket and path. You have performed one of the following to configure access to the destination S3 bucket:
 - You have configured access to the S3 bucket with a RAZ enabled environment.

It is a best practice to enable RAZ to control access to your object store buckets. This allows you to use your CDP credentials to access S3 buckets, increases auditability, and makes object store data ingest workflows portable across cloud providers.

- Ensure that Fine-grained access control is enabled for your DataFlow environment.
- From the Ranger UI, navigate to the S3 repository.
- Create a policy to govern access to the S3 bucket and path used in your ingest workflow.



Tip:

The Path field must begin with a forward slash (/).

- Add the machine user that you have created for your ingest workflow to the policy you just created.

For more information, see *Creating Ranger policy to use in RAZ-enabled AWS environment*.

- You have configured access to the S3 bucket using ID Broker mapping.

If your environment is not RAZ-enabled, you can configure access to the S3 bucket using ID Broker mapping.

- Access IDBroker mappings.
 - To access IDBroker mappings in your environment, click Actions Manage Access .
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- Add your CDP Workload User and the corresponding AWS role that provides write access to your folder in your S3 bucket to the Current Mappings section by clicking the blue + sign.



Note: You can get the AWS IAM role ARN from the Roles Summary page in AWS and can copy it into the IDBroker role field. The selected AWS IAM role must have a trust policy allowing IDBroker to assume this role.

- Click Save and Sync.

Related Concepts

[List of required configuration parameters for the S3 to IBM watsonx ReadyFlow](#)

List of required configuration parameters for the S3 to IBM watsonx ReadyFlow

When deploying the S3 to IBM watsonx ReadyFlow, you have to provide the following parameters. Use the information you collected in *Prerequisites*.

Table 1: S3 to IBM watsonx ReadyFlow configuration parameters

Parameter Name	Description
CDP Workload User	Specify the CDP machine user or workload user name that you want to use to authenticate to the object stores. Ensure this user has the appropriate access rights to the object store locations in Ranger or IDBroker.
CDP Workload User Password	Specify the password of the CDP machine user or workload user you are using to authenticate against the object stores.
CDPEnvironment	The CDP Environment configuration resources.
Destination S3 Bucket	Specify the name of the destination S3 bucket you want to write to. The full path will be constructed out of s3a://#{Destination S3 Bucket}/#{Destination S3 Path}

Parameter Name	Description
Destination S3 Path	Specify the path within the destination bucket where you want to write to. The full path is constructed out of s3a://#{Destination S3 Bucket}/#{Destination S3 Path}
IBM Cloud API Key	Specify the IBM Cloud API Key needed for the IAM token request.
IBM watsonx Model Input	Specify the model input body in JSON format. You must enter your IBM project ID. The default LLM model used is ibm/granite-13b-chat-v1. Do not modify the input attribute. Update other attributes as necessary.
IBM watsonx Model URL	Specify the IBM watsonx model URL. The default value is https://us-south.ml.cloud.ibm.com/ml/v1-beta/generation/text?version=2023-05-29.
Source S3 Bucket	Specify the name of the source S3 bucket you want to read from.
Source S3 Path	Specify the path within the source bucket where you want to read files from.

Related Concepts

[Prerequisites](#)

[Related Information](#)

[Deploying a ReadyFlow](#)