

Db2 CDC to Kudu

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ReadyFlow: Db2 CDC to Kudu

You can use the Db2 CDC to Kudu ReadyFlow to retrieve CDC events from a Db2 source table and stream them to a Kudu destination table.

This ReadyFlow uses Debezium to retrieve CDC events (INSERT, UPDATE, DELETE) from a Db2 source table to stream the events to a Kudu destination table. Failed Kudu write operations are retried automatically to handle transient issues. Define a KPI on the failure_ModifyKuduTable connection to monitor failed write operations.



Note:

This ReadyFlow does not support schema changes or primary key field updates. Make sure to assign the correct permissions for the Kudu destination table to the specified Cloudera Workload User.



Note: This ReadyFlow assumes that

- the DB2 table has column names in UPPERCASE (the default)
- the Kudu table is created through Impala, so the column names are lowercase (the default)

As a result, the PutKudu processor sets the property Lowercase Field Names to "true". Otherwise it would fail because of the different case.

Db2 CDC to Kudu ReadyFlow details	
Source	Db2 Table
Source Format	Db2 Table
Destination	Kudu
Destination Format	Kudu Table

Prerequisites

Learn how to collect the information you need to deploy the Db2 CDC to Kudu ReadyFlow, and meet other prerequisites.

For your data ingest source



Note: Do not change primary key field values in your source table after configuring the ReadyFlow. Doing so will cause the ReadyFlow to reject updates.



Note: You need to take care of field case sensitivity when defining source and destination table structure.

- You have obtained the Db2 database server hostname and port.
- You have obtained the Db2 database name, schema name, and table name. Take note of the table structure, specifically field case sensitivity.
- You have obtained a username and password to access the Db2 table.
- You have obtained the Db2 database driver jar file.
- You have performed the [Db2 setup tasks required to run Debezium](#).

For Cloudera DataFlow

- You have enabled Cloudera DataFlow for an environment.

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

- You have created a Machine User to use as the Cloudera Workload User.
- You have given the Cloudera Workload User the EnvironmentUser role.
 1. From the Management Console, go to the environment for which Cloudera DataFlow is enabled.
 2. From the Actions drop down, click Manage Access.
 3. Identify the user you want to use as a Workload User.

**Note:**

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

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


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

- You have granted your Cloudera 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 target

- You have a Real-Time Data Mart cluster running Kudu, Impala, and Hue in the same environment for which Cloudera DataFlow has been enabled.
- You have the Kudu Master hostnames.
 1. From Management Console, click Data Hub Clusters.
 2. Select the Real-Time Data Mart cluster to which you want to ingest data into.
 3. Click the Hardware tab.
 4. Copy the FQDN for each Kudu Master.

- You have the Kudu database name.
 1. Navigate to your Real Time Data Mart cluster and click Hue from the Services pane.
 2. Click the Tables icon on the left pane.
 3. Select the default database.
- You have created the Kudu table that you want to ingest data into. Ensure that the field case sensitivity matches that of the source table.
 1. Navigate to your Real Time Data Mart cluster and click Hue from the Services pane.
 2. Click the Tables icon on the left pane.
 3. Select the default database, and click + New to create a new table.
 4. In the Type field, select Manually and click Next.
 5. Provide the table Name, Format, Primary keys, and any partitions.
 6. Click Submit. The newly created table displays in the default database Tables pane.
 7. Check the Kudu UI **Tables** tab for the name of the table you created. You will need this table name when you use the Cloudera DataFlow Deployment wizard to deploy the ReadyFlow.
- You have assigned permissions via IDBroker or in Ranger to enable the Cloudera Workload User to access the Kudu table that you want to ingest data into.
 1. From the base cluster on Cloudera Public Cloud, select Ranger.
 2. Select your Real Time Data Mart cluster from the **Kudu** folder.
 3. Click Add New Policy policy.
 4. On the **Create Policy** page, enter the Kudu table name in the topic field.
 5. Add the Cloudera Workload User in the Select User field.
 6. Add the Insert and Select permissions in the Permissions field.
 7. Click Save.

Related Concepts

[List of required configuration parameters for the Db2 CDC to Kudu ReadyFlow](#)

List of required configuration parameters for the Db2 CDC to Kudu ReadyFlow

When deploying the Db2 CDC to Kudu ReadyFlow, you have to provide the following parameters. Use the information you collected in *Prerequisites*.

Table 1: Db2 CDC to Kudu 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 Kudu. Ensure this user has the appropriate access rights to the Kudu table.
CDP Workload User Password	Specify the password of the Cloudera machine user or workload user you are using to authenticate to Kudu.
Destination Database Table Name	Specify the destination database table name in the form: [database_name].[table_name].
Kudu Master Hosts	Specify the Kudu Master hostnames in a comma separated list.
Source Database Driver	Upload the database driver jar file for your source database.
Source Database Name	Specify the source database name.
Source Database Password	Specify the source database password.
Source Database Server Host Name	Specify the source database server host name.

Parameter Name	Description
Source Database Server Port	Specify the source database server port. The default value is 50000.
Source Database Table Name	Specify the source database table name in the form: [schema_name].[table_name].
Source Database User	Specify the source database user.

Related Concepts[List of required configuration parameters for the Db2 CDC to Kudu ReadyFlow](#)**Related Information**[Deploying a ReadyFlow](#)