# Hands-on Lab: Analyzing DB2 Data With Cognos Analytics

### Objective for Exercise:

- To create a dashboard with Billing data on DB2 using Cognos Analytics and analyze the regionwise spend.

### Prerequisites

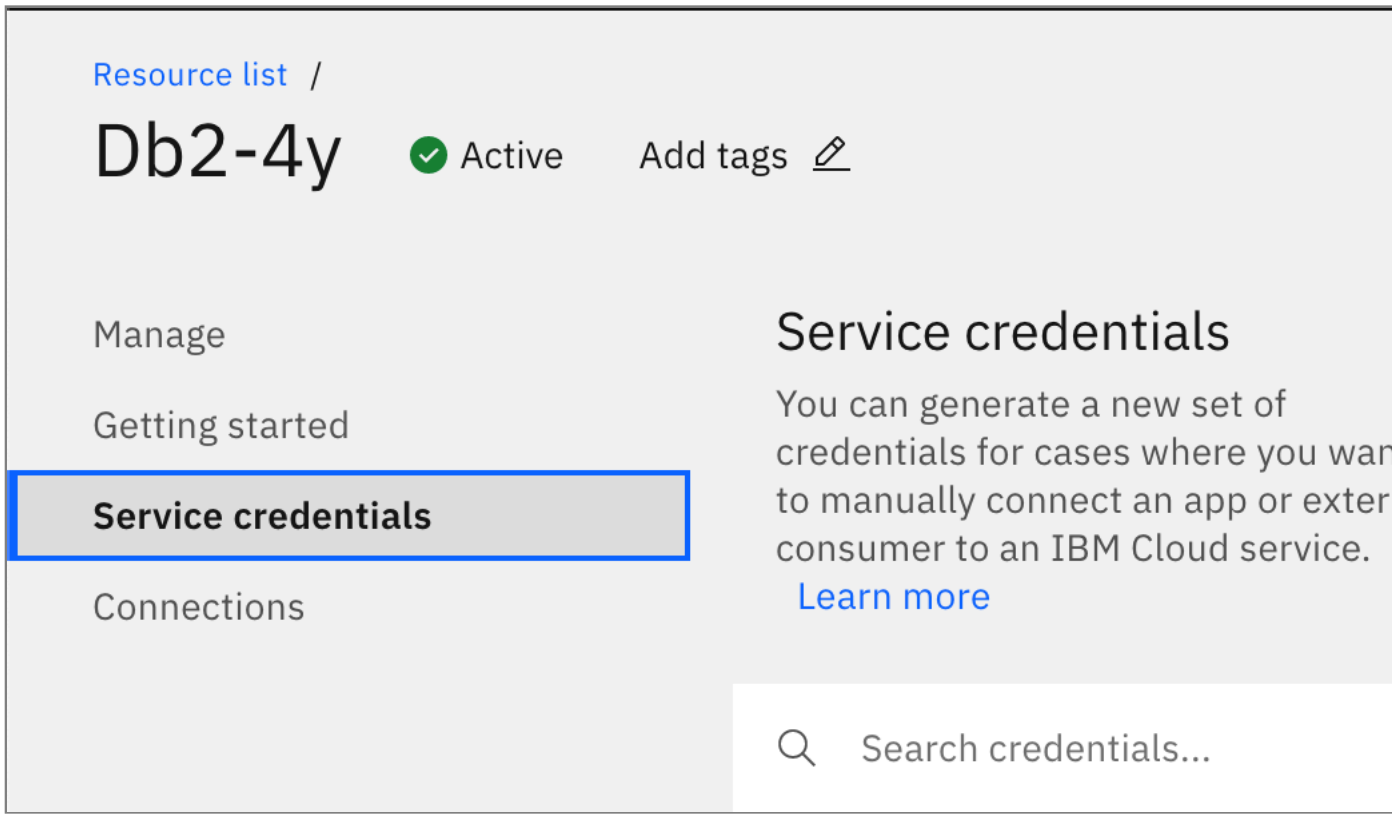
Prior to starting this lab please ensure you have completed the previous labs to:

- Create an IBM Cloud Account
- Provision an instance of DB2 on Cloud
- Provision an instance of Cognos Analytics

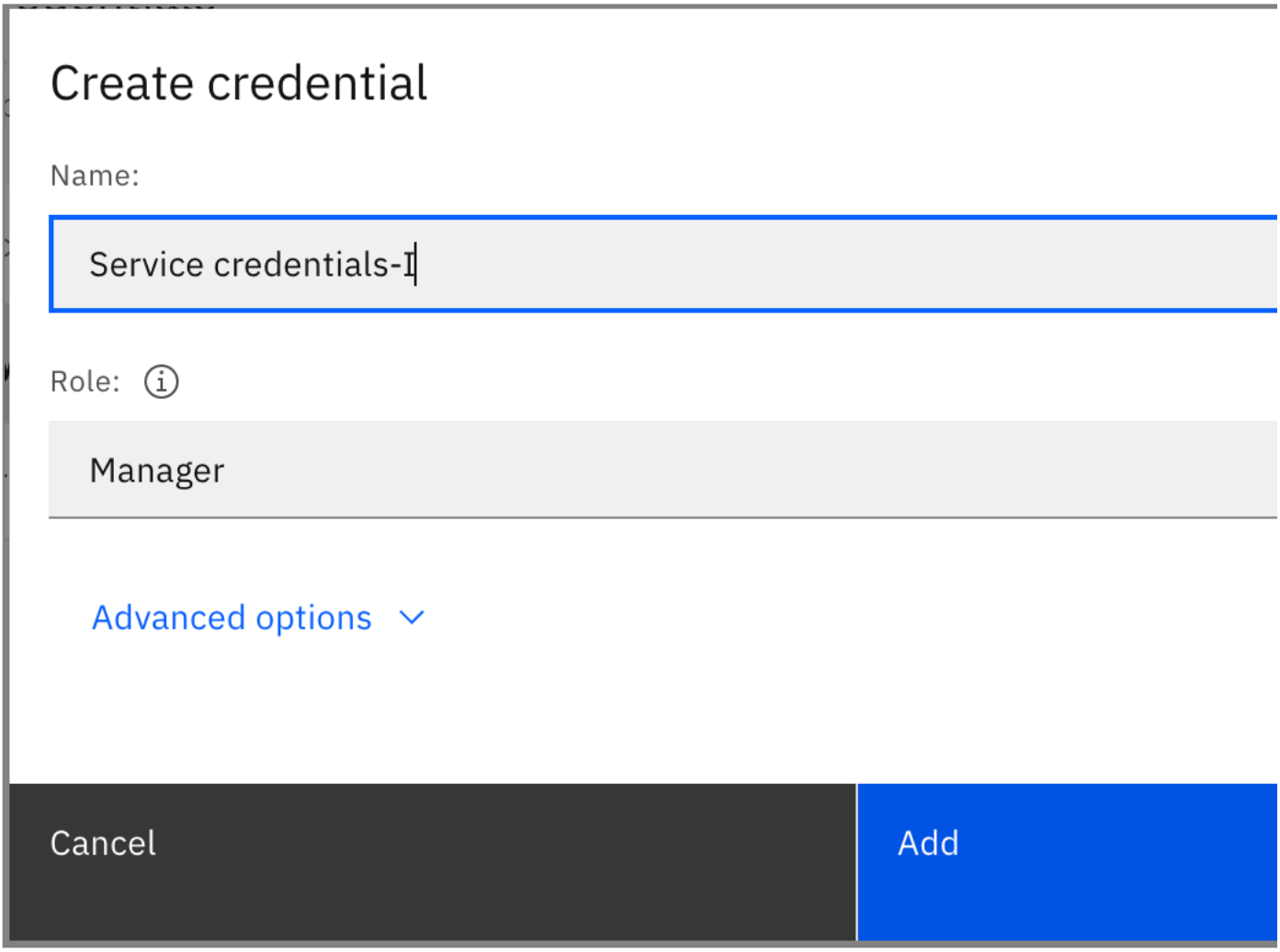
### Task 1- Load the data in DB2

If you have service credentails created, skip steps 1 and 2.

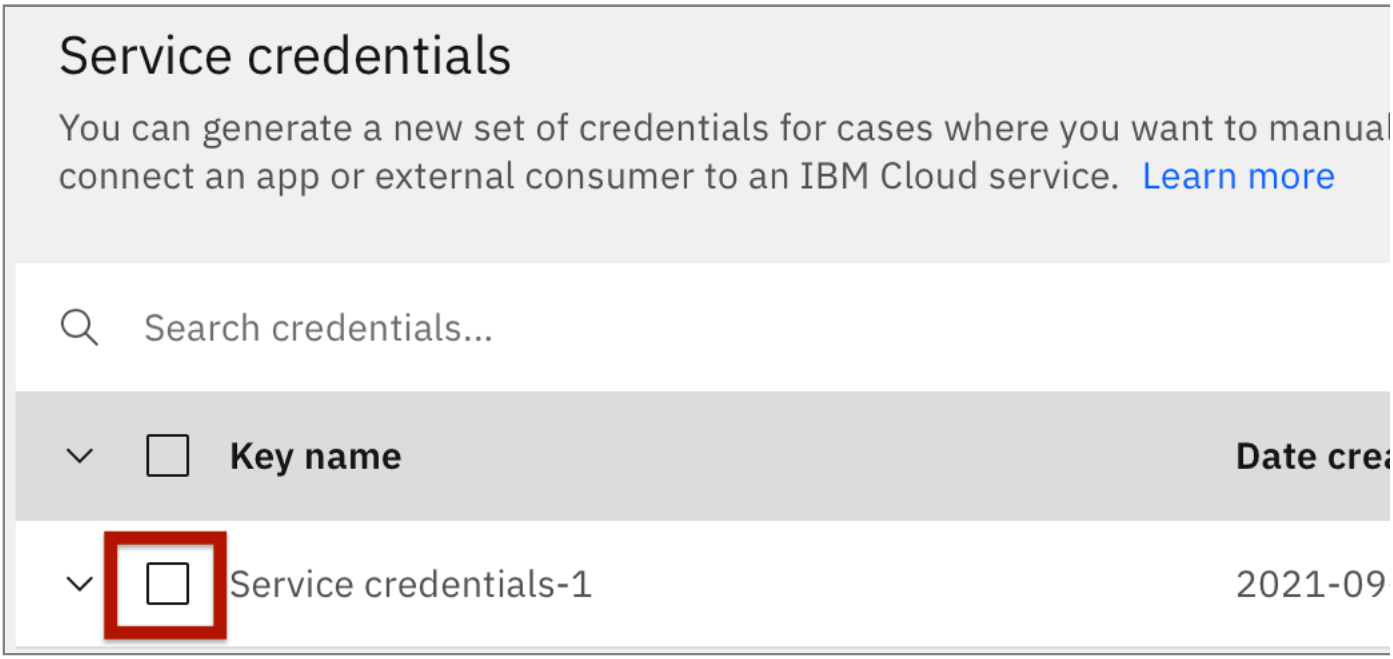
1. Click on **Service Credentials** and create new credentials.




2. Give the credential a name and **Manager** privilige and add it.




3. Click on the down arrow next to the credential. You will see the credential details. Make a note of the username, password and jdbc connection url. These will be used in later part of the lab to connect from Cognos.

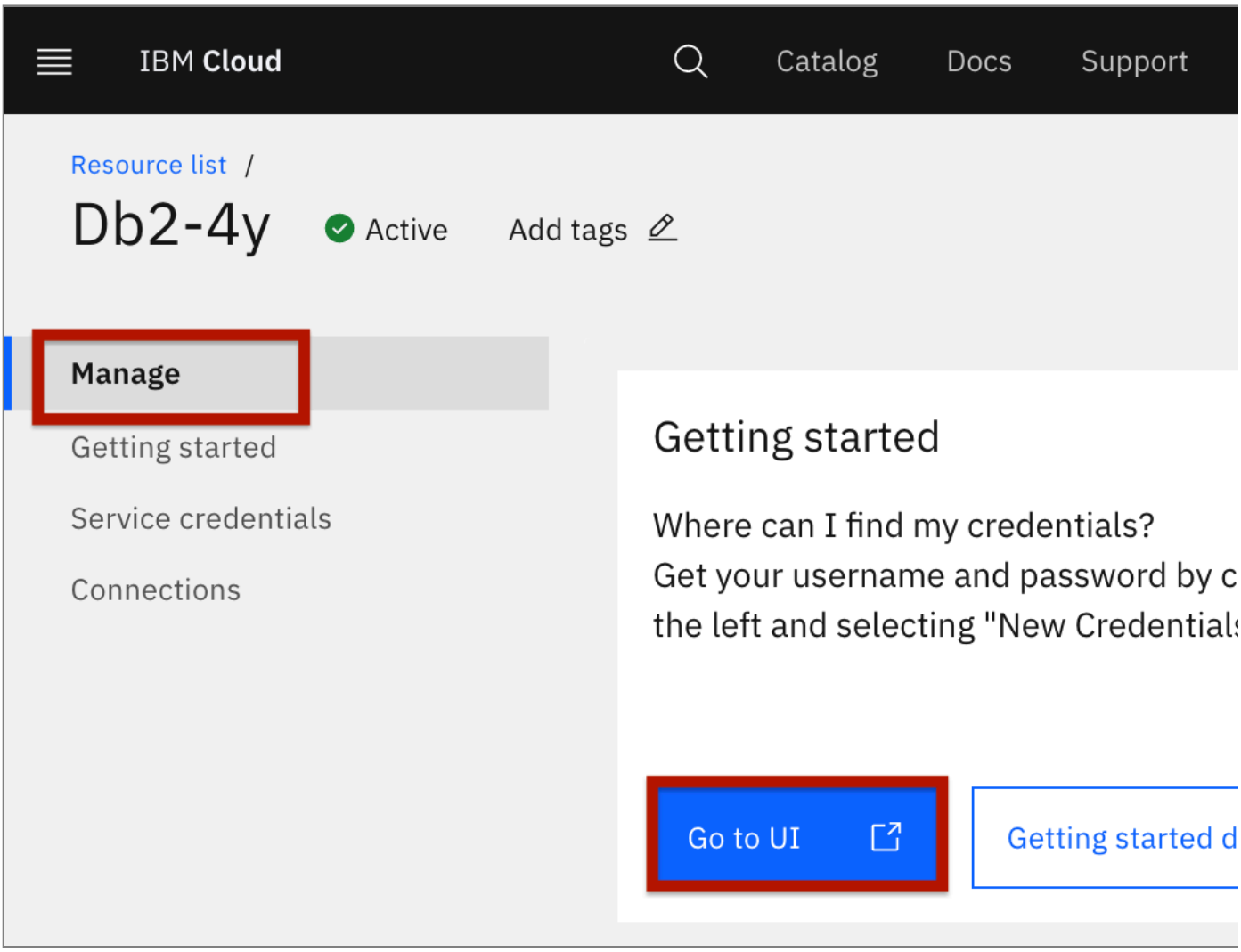

Service credentials
You can generate a new set of credentials for cases where you want to manual
connect an app or external consumer to an IBM Cloud service. Learn more
Search credentials...
Key name
Date crea
Service credentials-1
2021-09


"db2": {
"authentication": {
"method": "direct",
"password":
"username":
},
"certificate": {
"certificate_base64": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tCk1JSURFakND
"name": "1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8"
},
"composed": [
"db2://lfn96733:dl0xxWy1FWkzIe0Y@fbd88901-ebdb-4a4f-a32e-9822b9fb237b.c
db?authSource=admin&replicaSet=replset"
],
"database": "bludb",
"host_ros": [
"fbd88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu0lqde00.databases.ap
],
"hosts": [
{
"hostname": "fbd88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu0lqde0
"port": 32731
}
],
"jdbc_url": [
"jdbc:db2://fbd88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu0lqde00.c
word=<your_password>;sslConnection=true;"

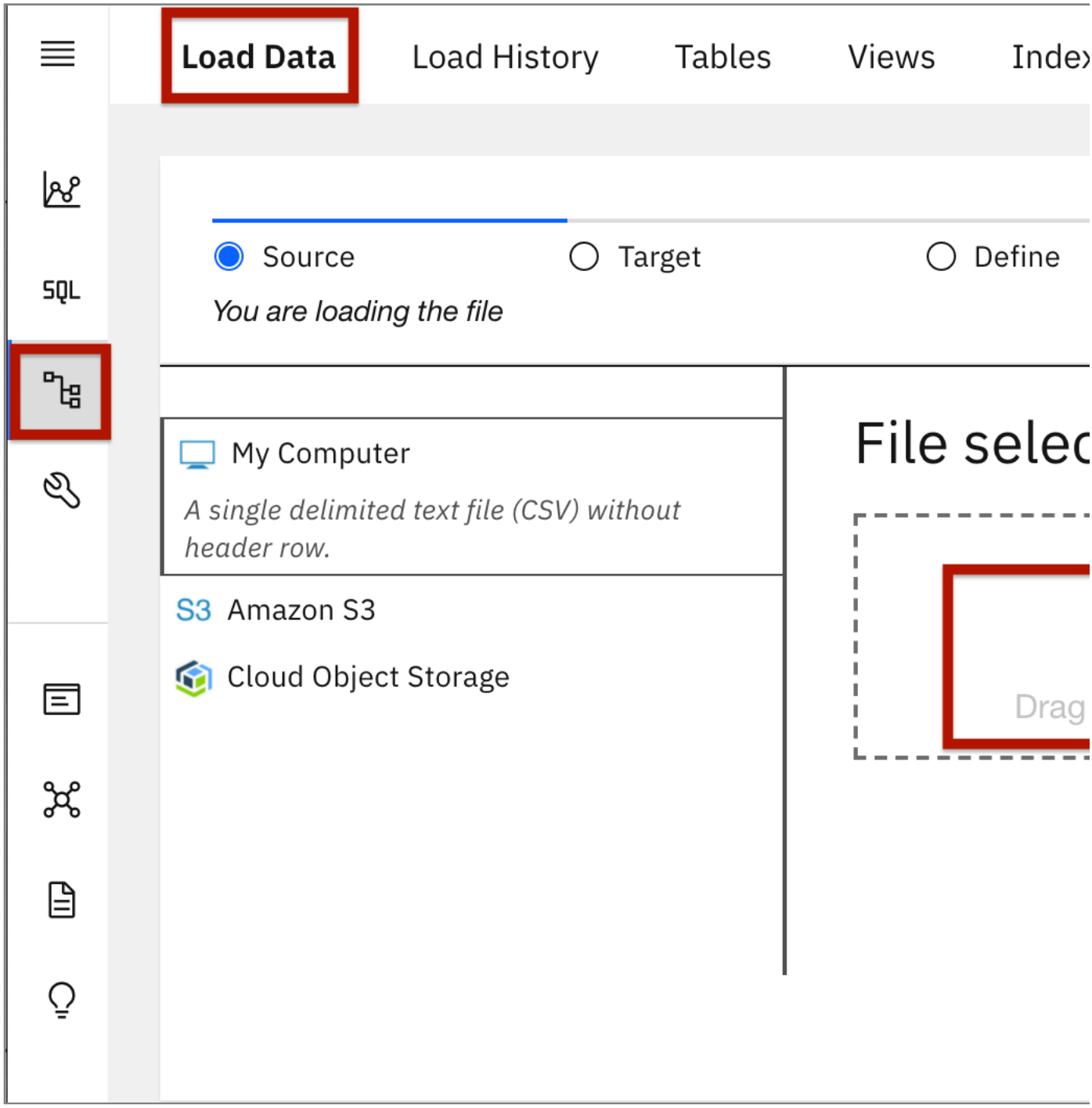
*Note:You have to replace the placeholder for username and password in the jdbc url string with actual username and password. Remove the angle brackets.

4. Go to the data link. Right-click and choose **Save AS…**. Save the file in your local system as *cloud-billing-dataset.csv*.

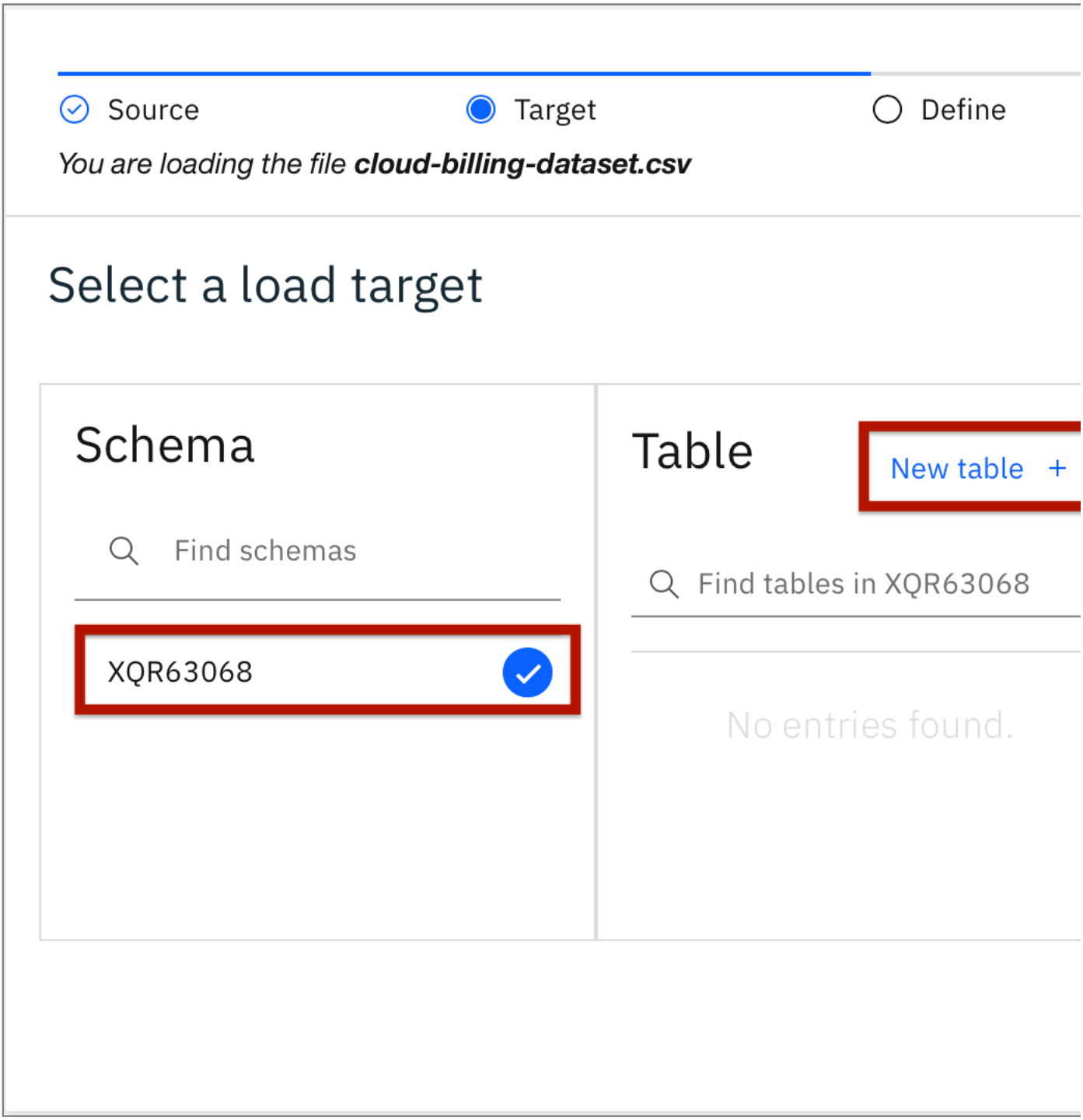
5. Once the instance is created from the db2 instance page, choose **Manage** from the left menu and click on **Go to UI**.



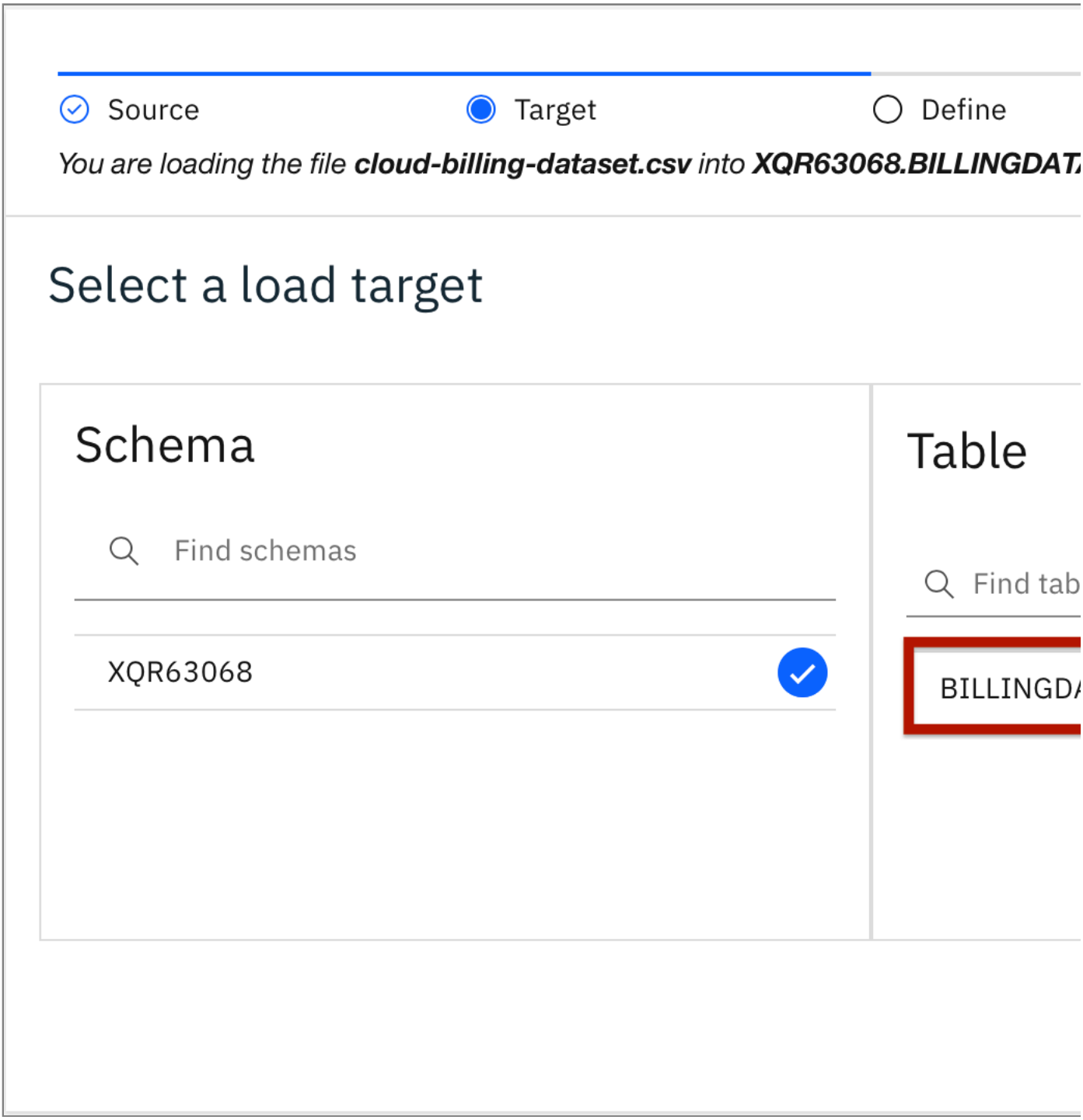

6. Click on the **Data** icon on the left menu, choose **Load Data** and broswe and select the file, **cloud-billing-dataset.csv** which you saved in your local system.




7. Choose the **Schema**, click on **New Table +** and create a new table with the name **BillingData** and click on Create.




8. You will see the table is added to the schema. Click on **Next** to load the data from the file.



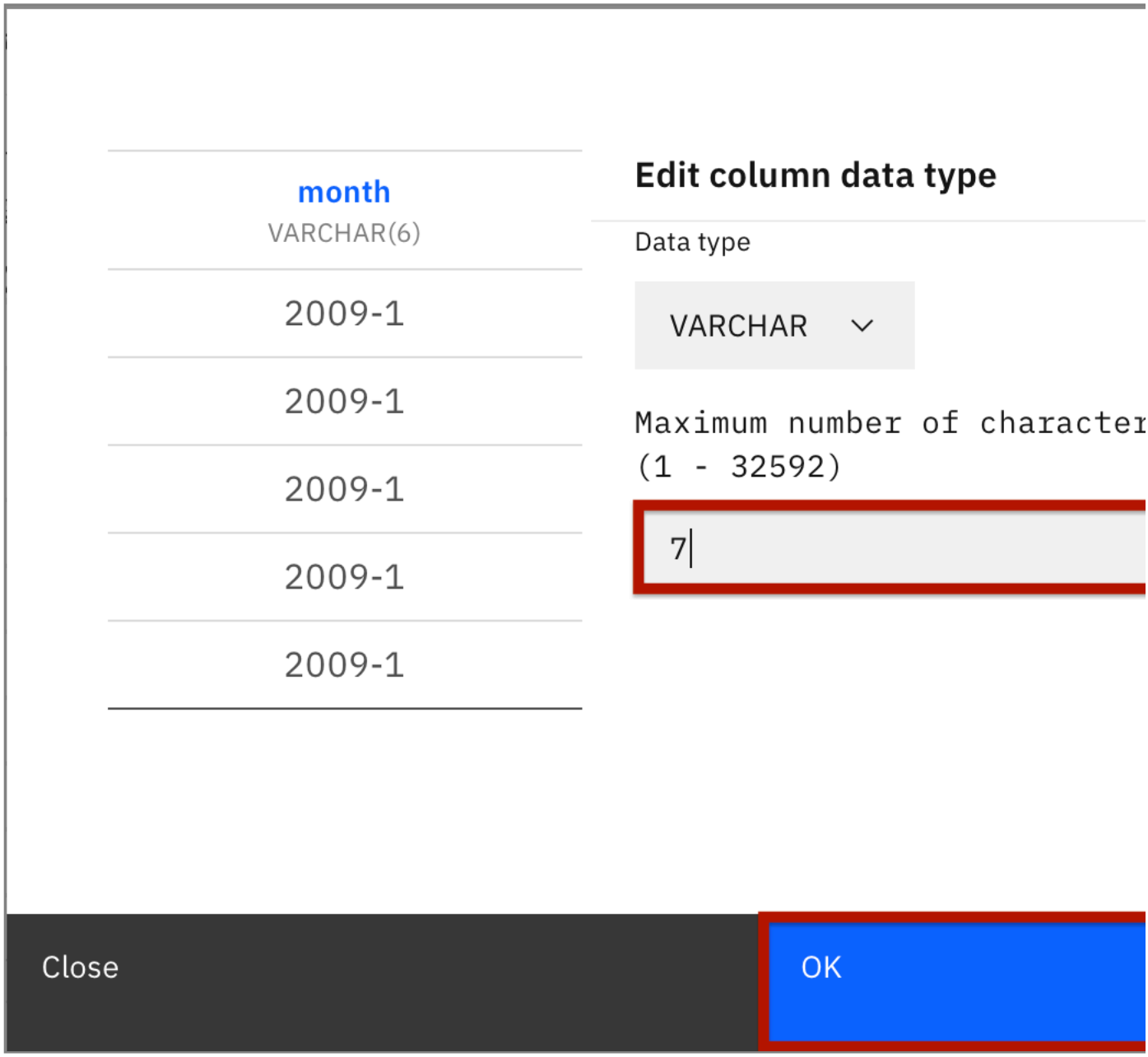

9. The table is loaded. You will see that each column has data type and column width auto generated based on the content. Edit column attributes by clicking on the pencil icon next to the respective attributes to change the width of **country** column to varchar of 30 and **month** column to varchar of 7.

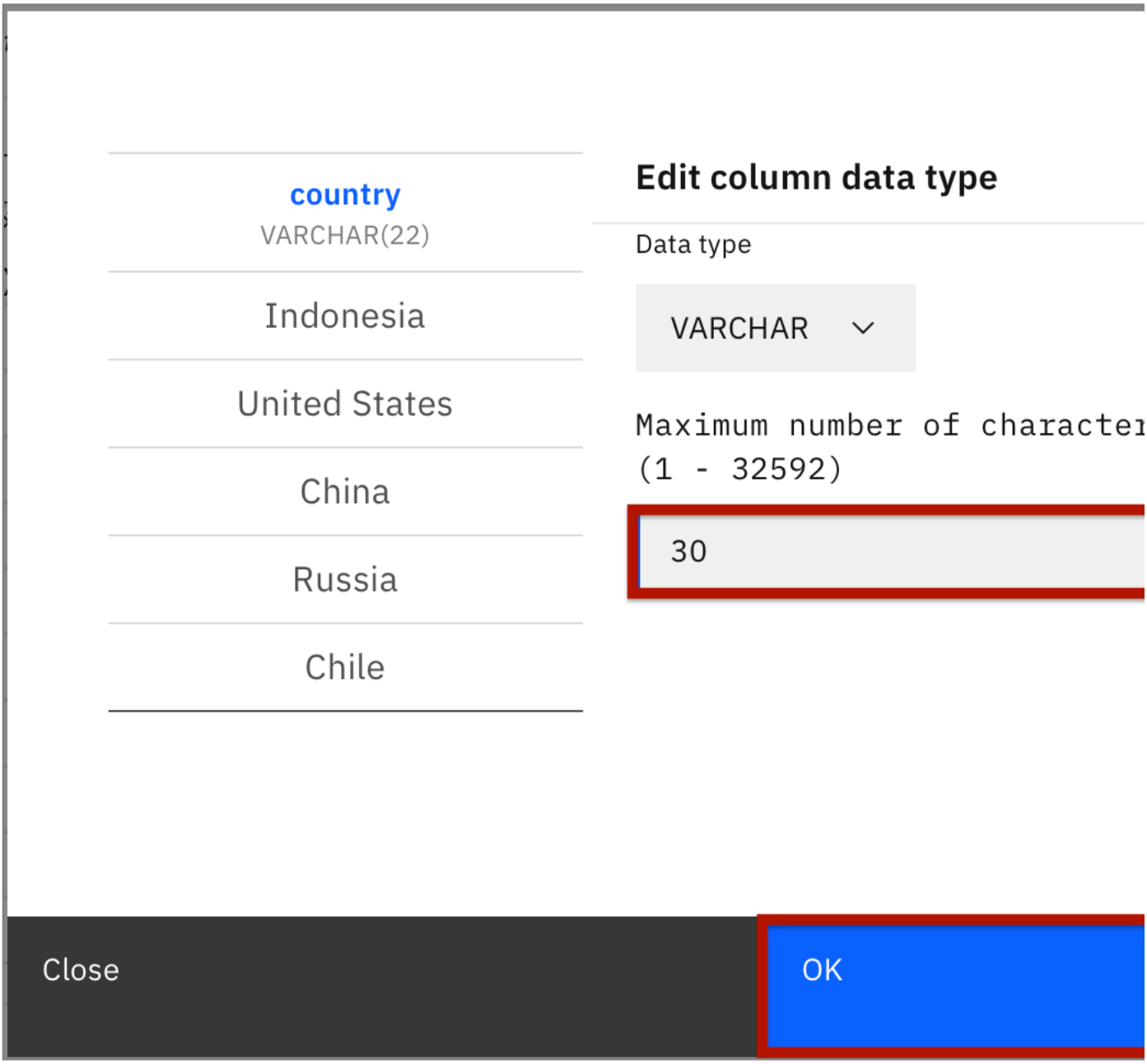
Source Target

*You are loading the file **cloud-billing-dataset.csv** into **XQR63068.BILLINGDAT***

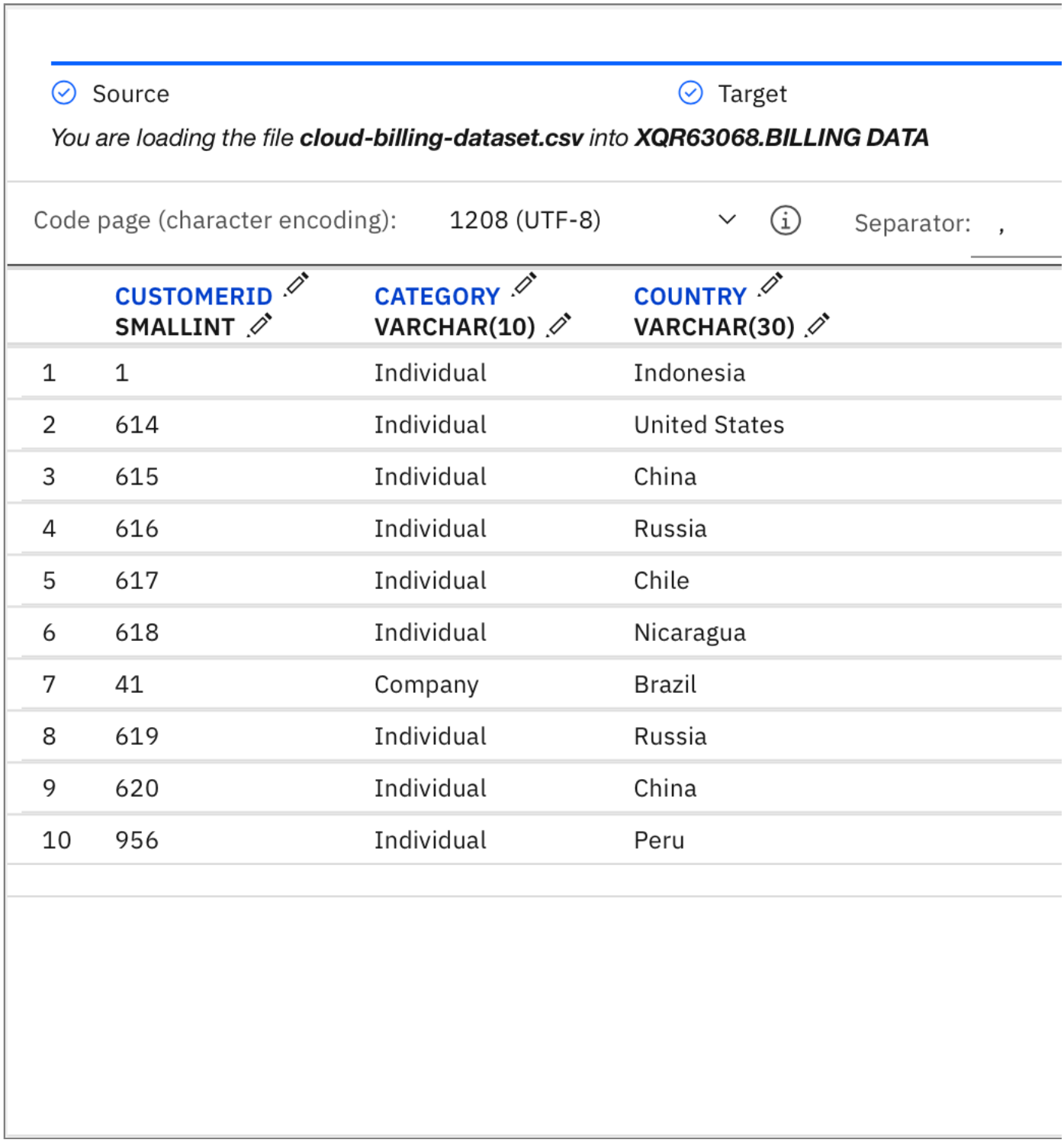
Code page (character encoding): 1208 (UTF-8) Sepa

| | CUSTOMERID SMALLINT | CATEGORY VARCHAR(10) | COUNTRY VARCHAR(22) |
|---|---|---|---|
| 1 | 1 | Individual | Indonesia |
| 2 | 614 | Individual | United States |
| 3 | 615 | Individual | China |
| 4 | 616 | Individual | Russia |
| 5 | 617 | Individual | Chile |
| 6 | 618 | Individual | Nicaragua |
| 7 | 41 | Company | Brazil |
| 8 | 619 | Individual | Russia |
| 9 | 620 | Individual | China |
| 10 | 956 | Individual | Peru |


month
VARCHAR(6)
2009-1
2009-1
2009-1
2009-1
2009-1
Edit column data type
Data type
VARCHAR
Maximum number of character
(1 - 32592)
7
Close
OK

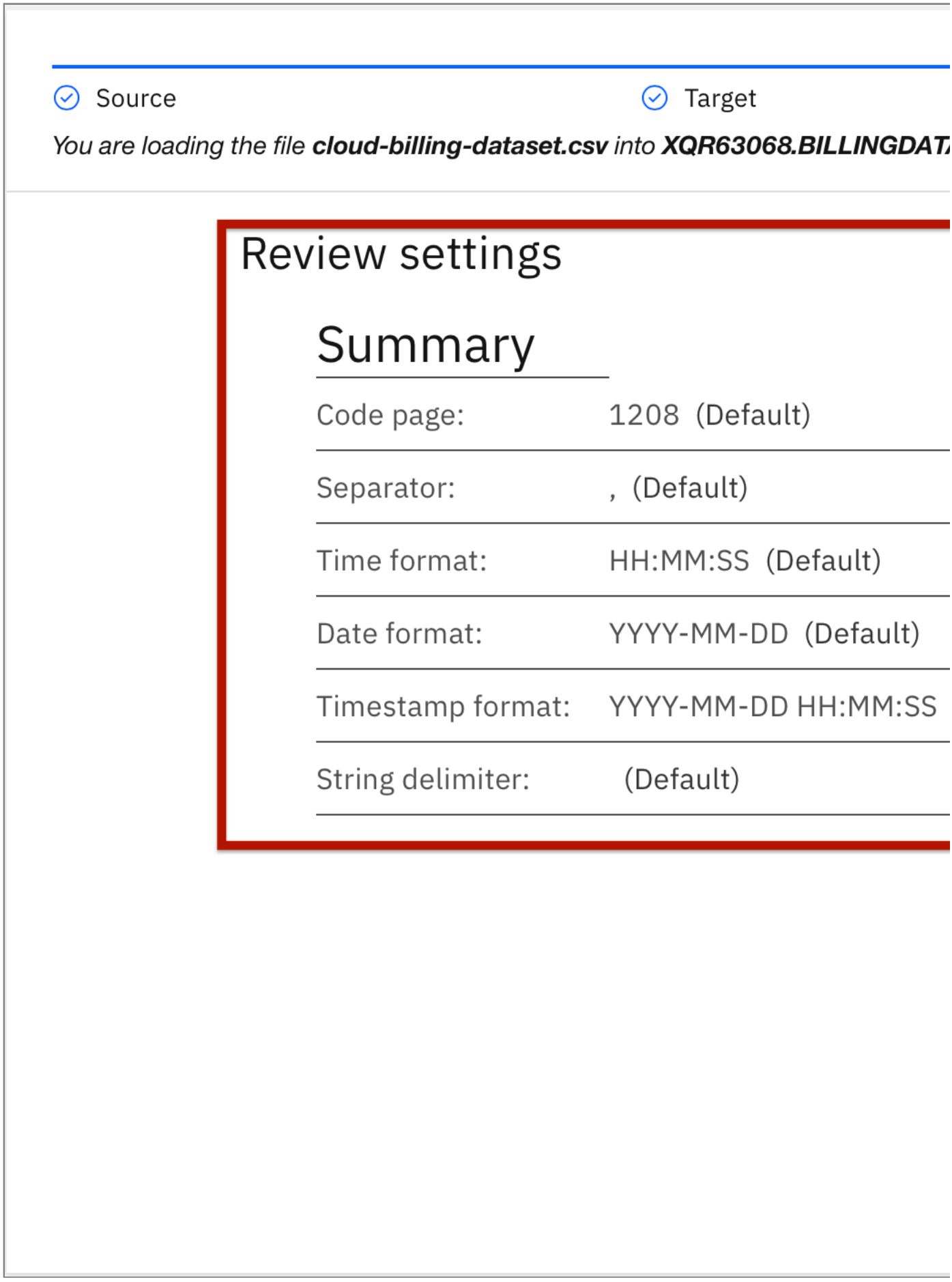



10. Once the column attributes are changed, check to see if it reflects and then click on **Next**

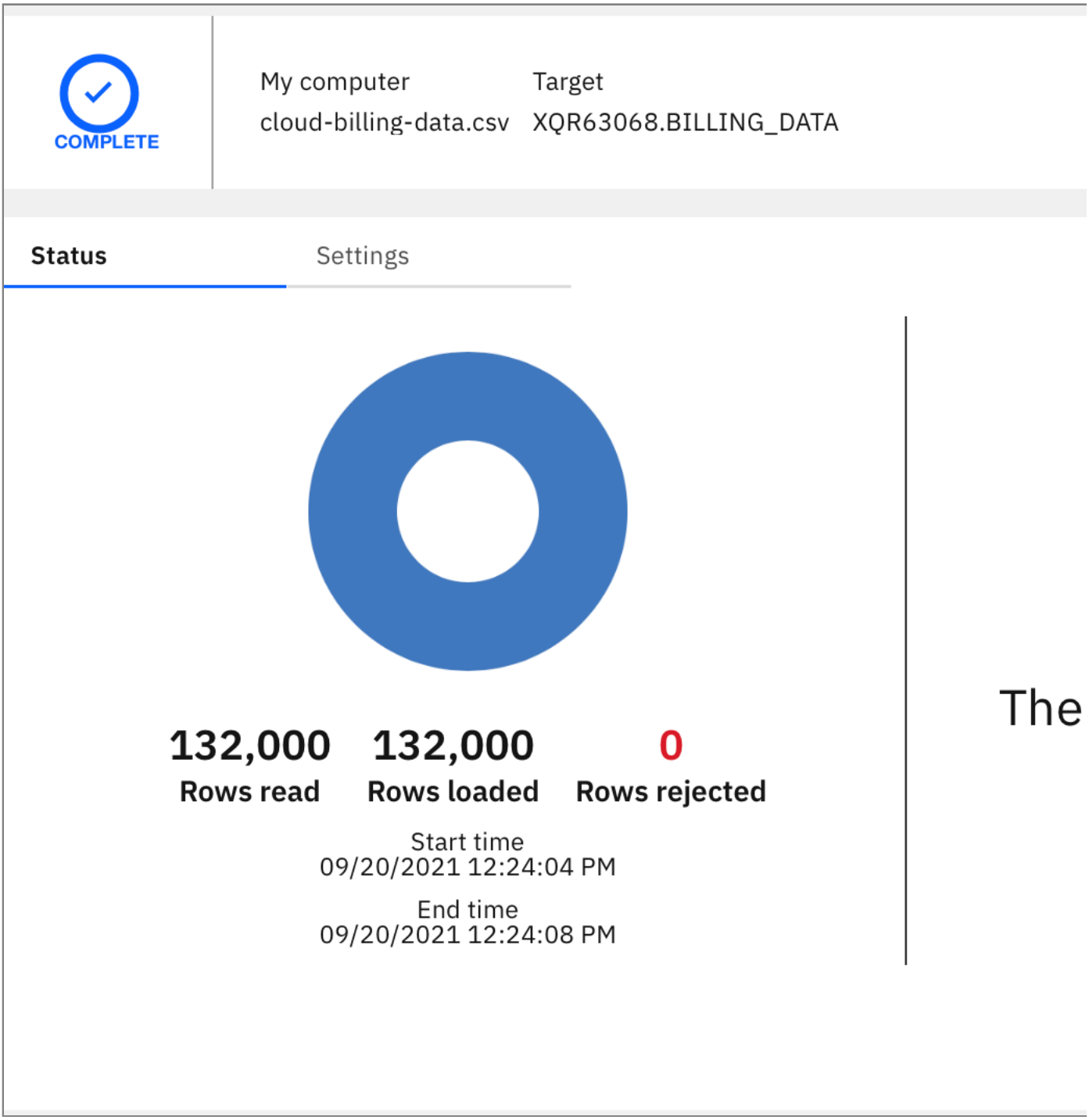



| | CUSTOMERID SMALLINT | CATEGORY VARCHAR(10) | COUNTRY VARCHAR(30) |
|---|---|---|---|
| 1 | 1 | Individual | Indonesia |
| 2 | 614 | Individual | United States |
| 3 | 615 | Individual | China |
| 4 | 616 | Individual | Russia |
| 5 | 617 | Individual | Chile |
| 6 | 618 | Individual | Nicaragua |
| 7 | 41 | Company | Brazil |
| 8 | 619 | Individual | Russia |
| 9 | 620 | Individual | China |
| 10 | 956 | Individual | Peru |

11. Review the settings and click on **Begin Load** to load the data.

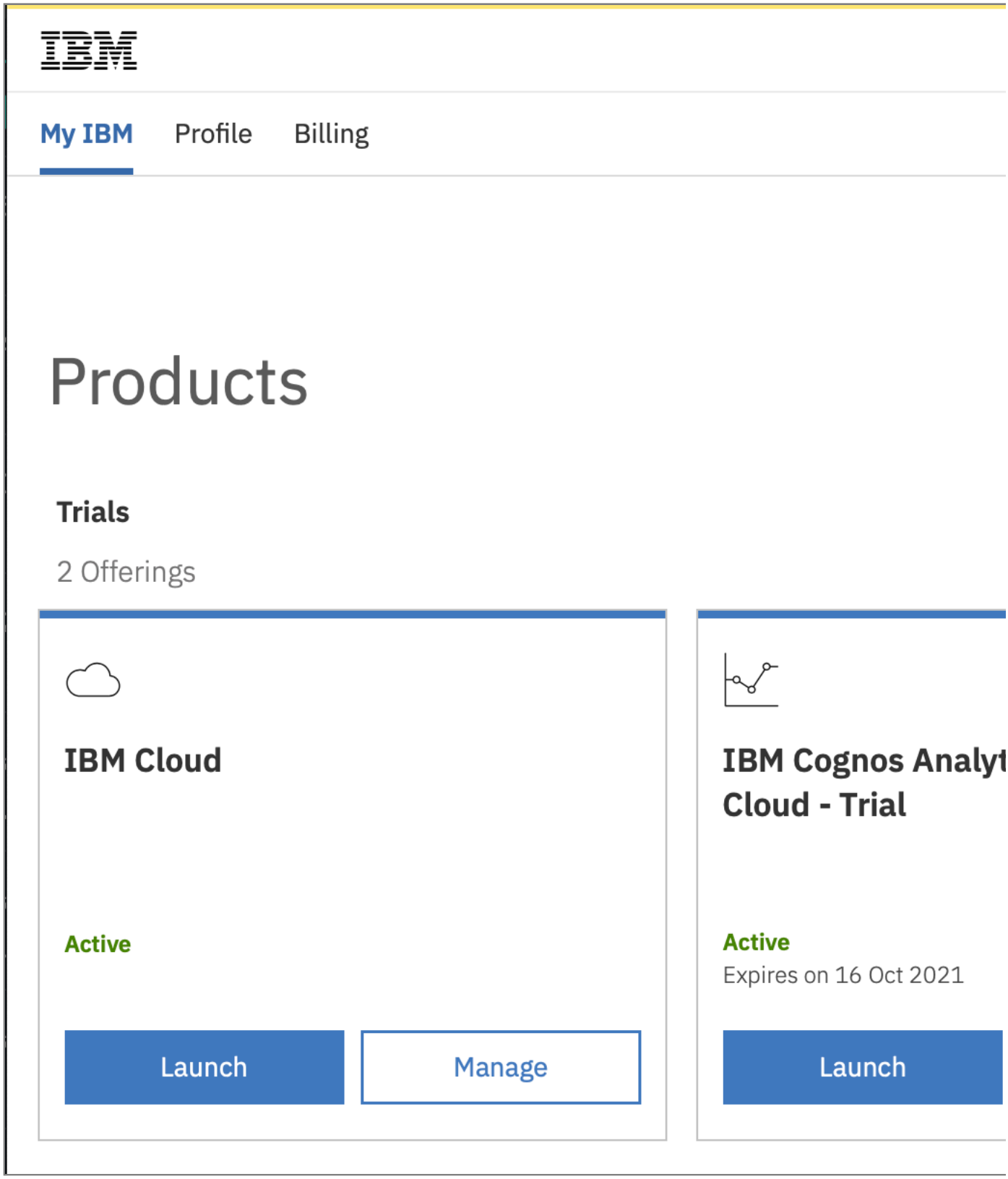



12. If the data is successfully loaded, you get a message on the screen indicating the number of rows that have been loaded.

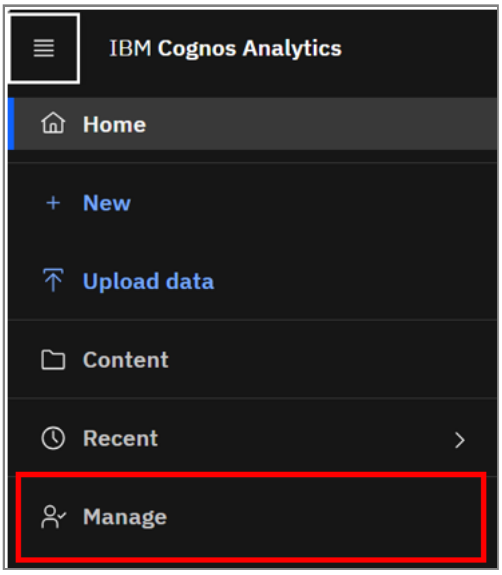



**Task 2 - Connect Cognos to DB2**

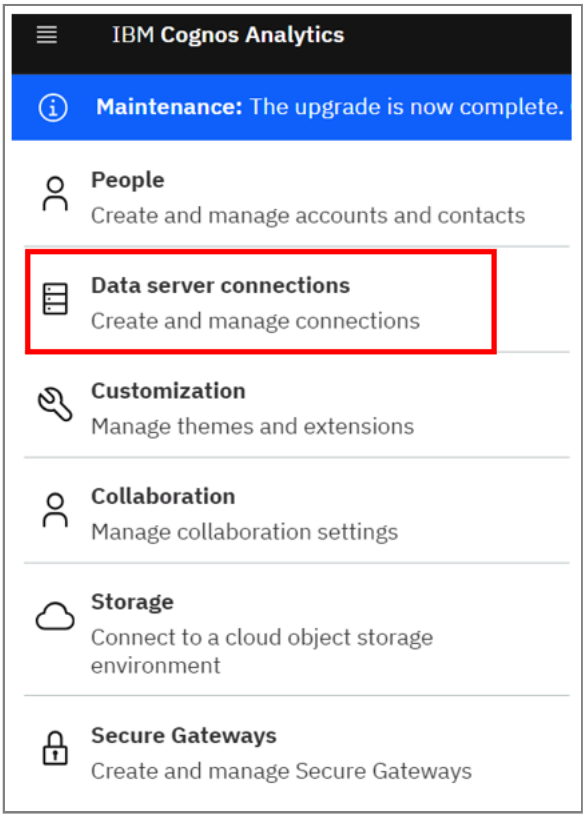
1. Navigate to myibm.ibm.com. Login with your IBM Cloud credentails and launch **Cognos Analytics**.



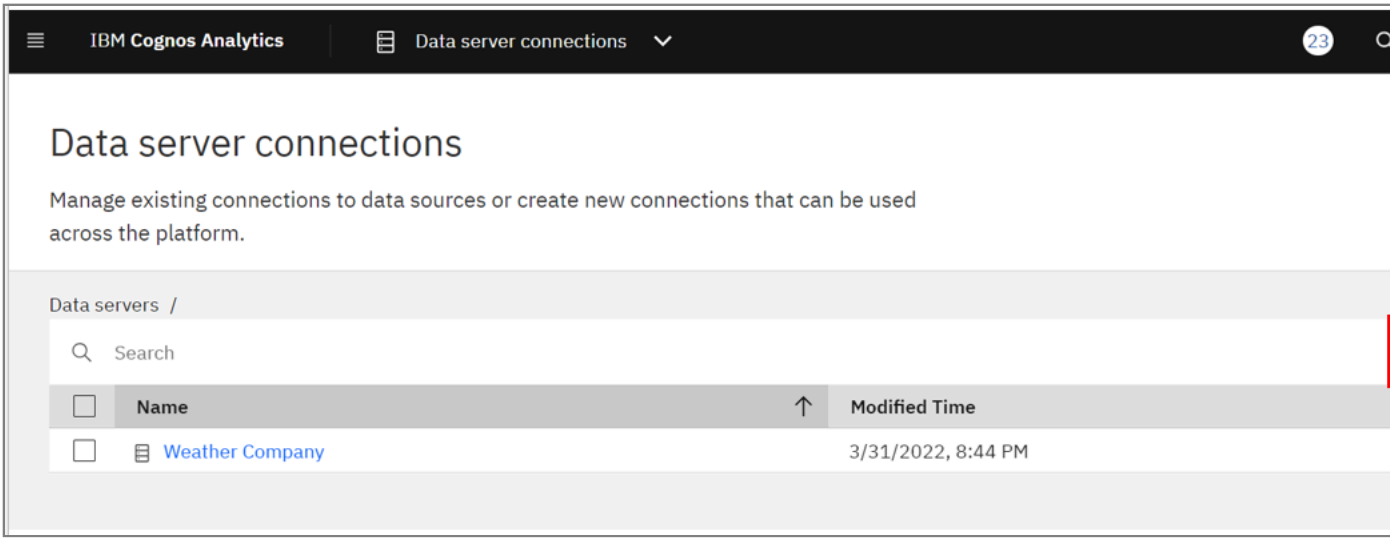

2. Click the hambuger menu on the upper left and select **Manage**.



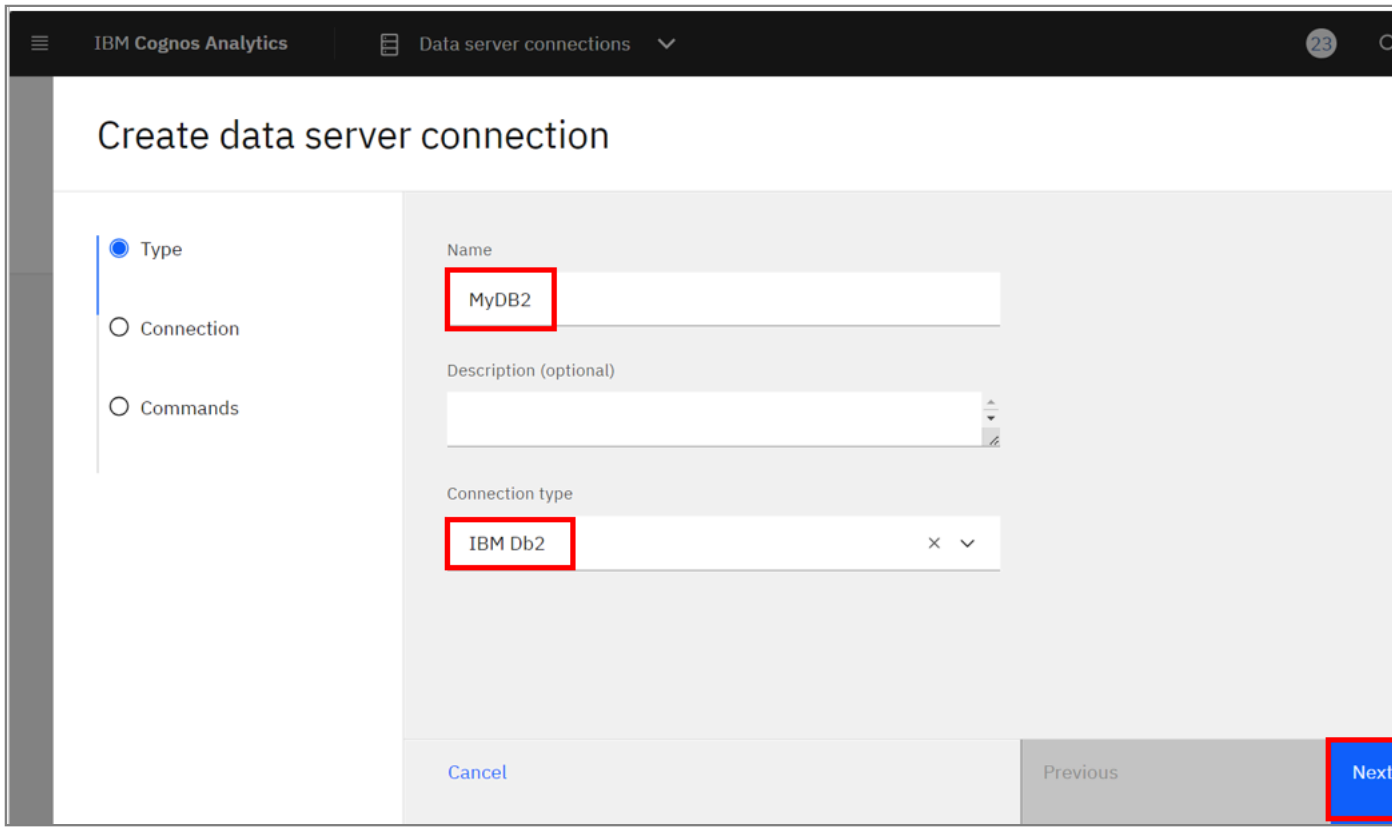

3. Select **Data Server Connections**.




4. Click on **Add data Server** to add a new server.



5. Provide a name **MyDB2** to the connection. Select **IBM DB2** from the list in the Connection type. Click on **Next**.

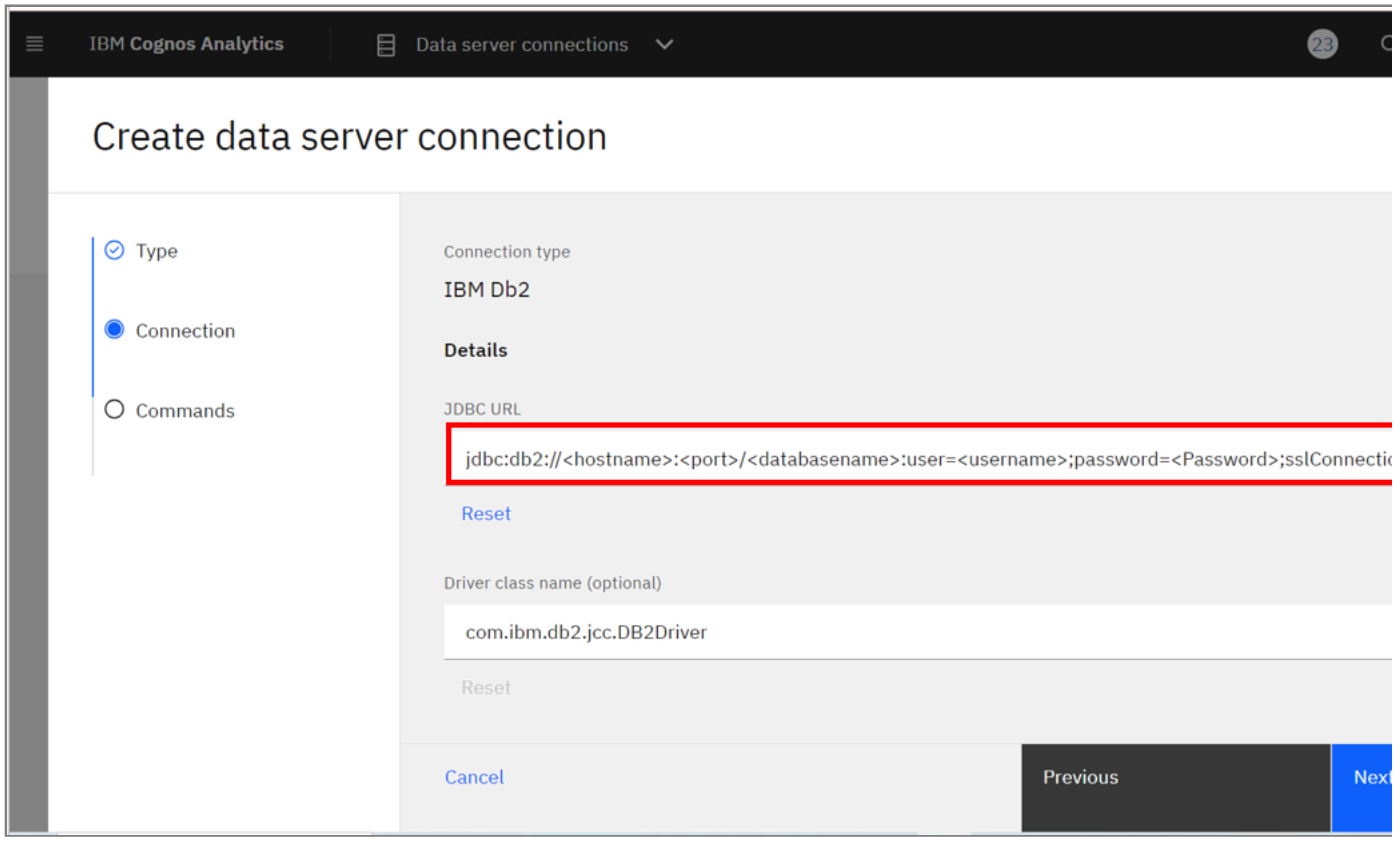



6. Provide hostname, port, and database for JDBC URL. (While adding the database, make sure to add the username, password, and the SSL connection to true as shown below:

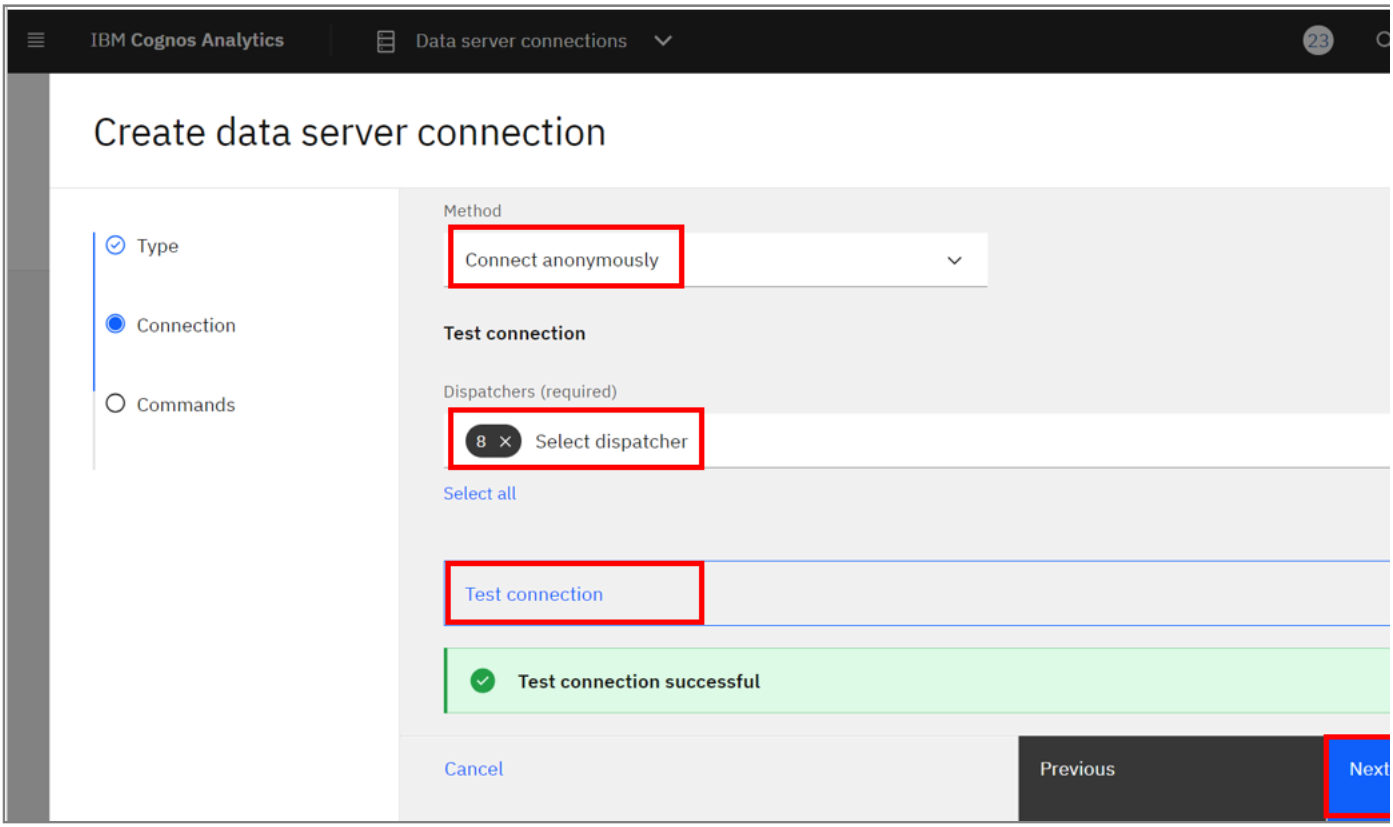
```
1
```

```
jdbc:db2://<Hostname>:<Port>/<Database>:user=<username>;password=<Password>;sslConnection=true;
```

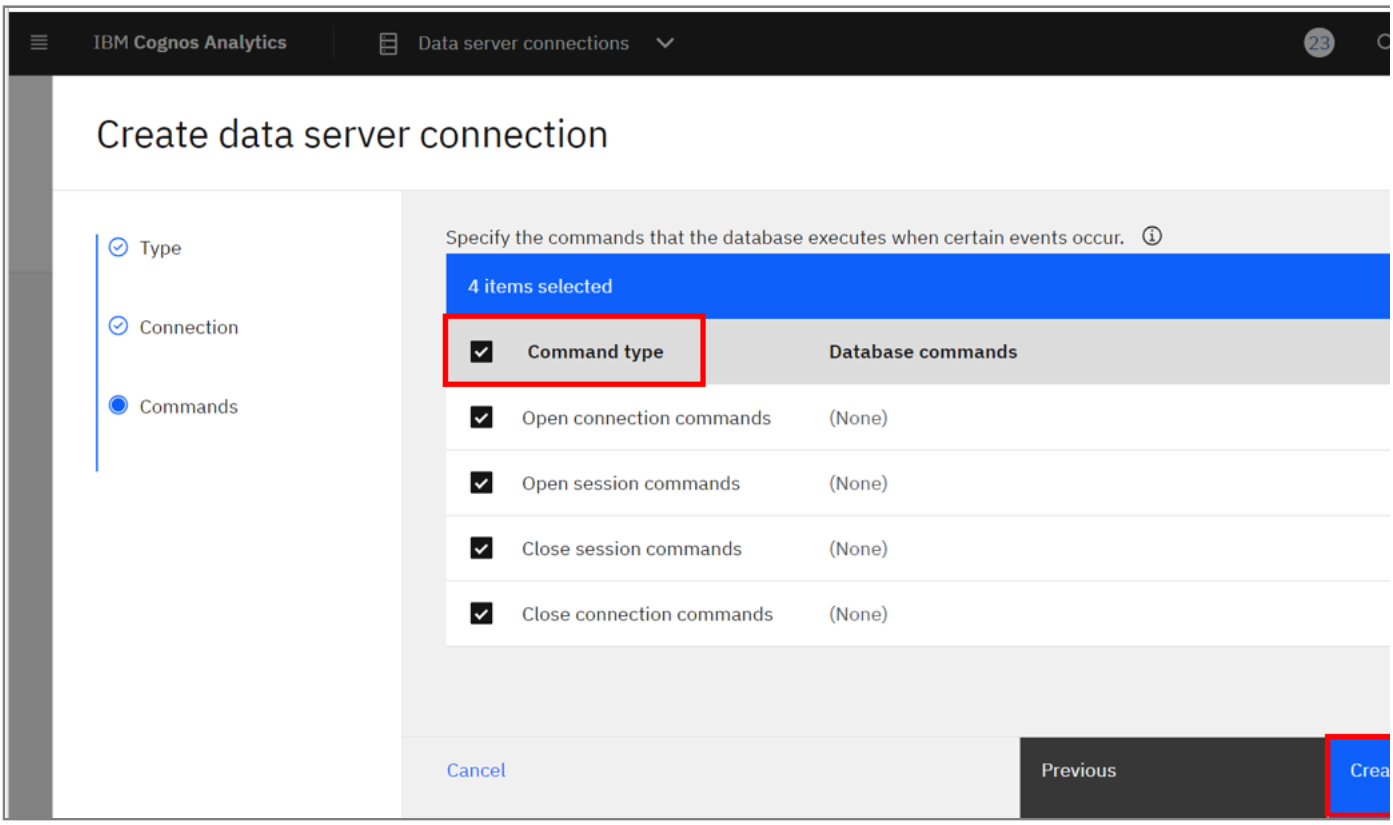
Copied!



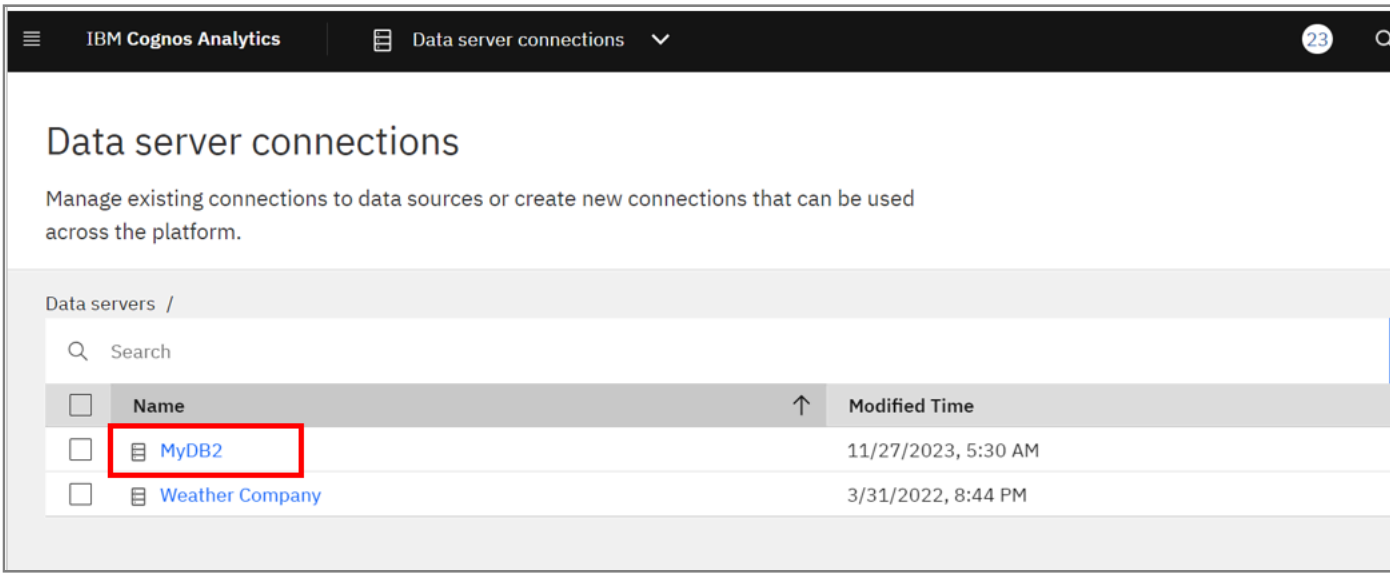

7. Then **Scroll down**. Select **Connect Anonymously** from the **Method** drop-down list. Select **Select all** in **Dispatcher**. Then Click on **Test Connection** to test the connection. If the test succeeded you will see **Test connection successfull**. Click on **Next**.




8. Select all check boxes for Command type and Click on **Create**.

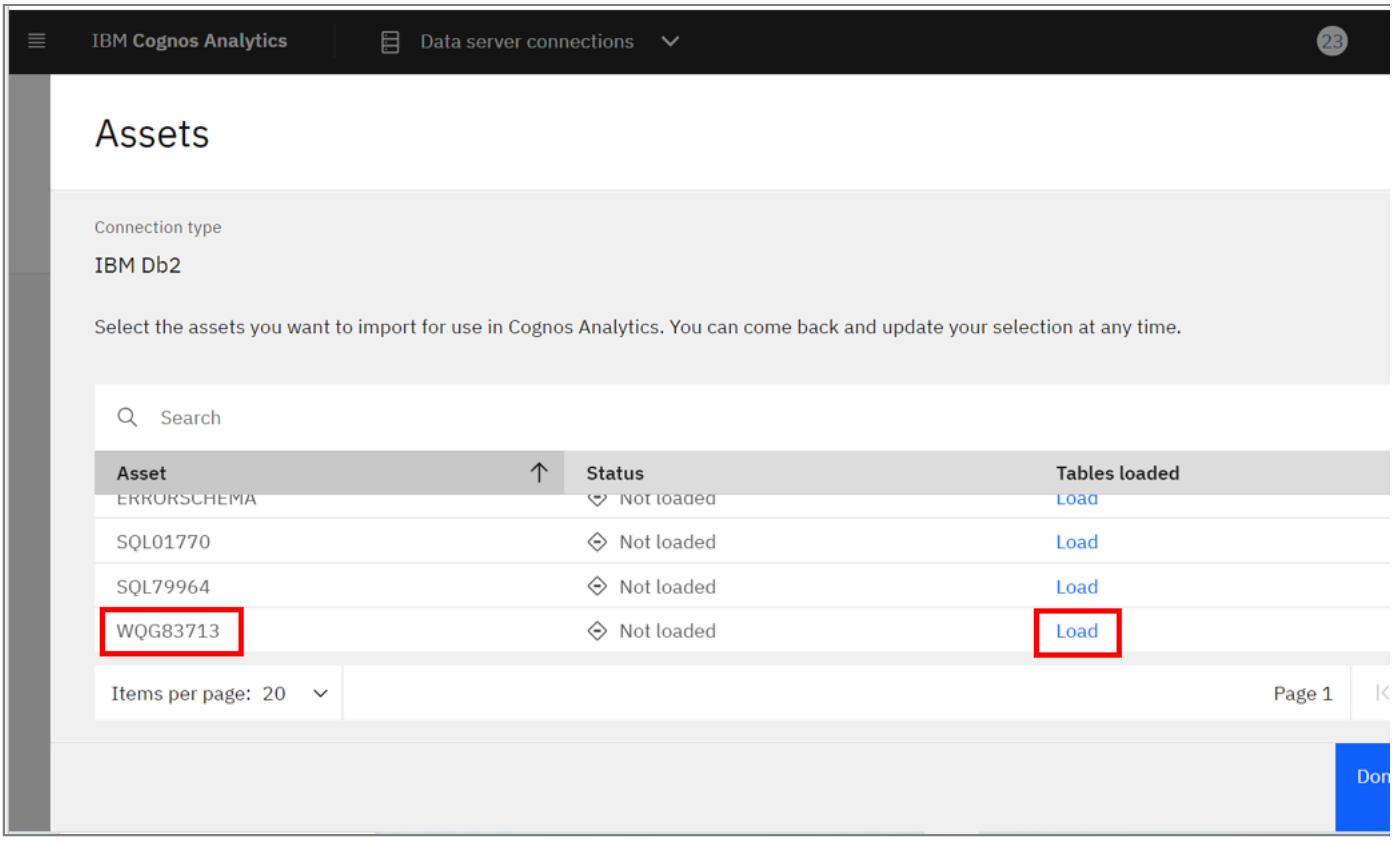



9. Click on the Data Server **MyDB2** created previously.

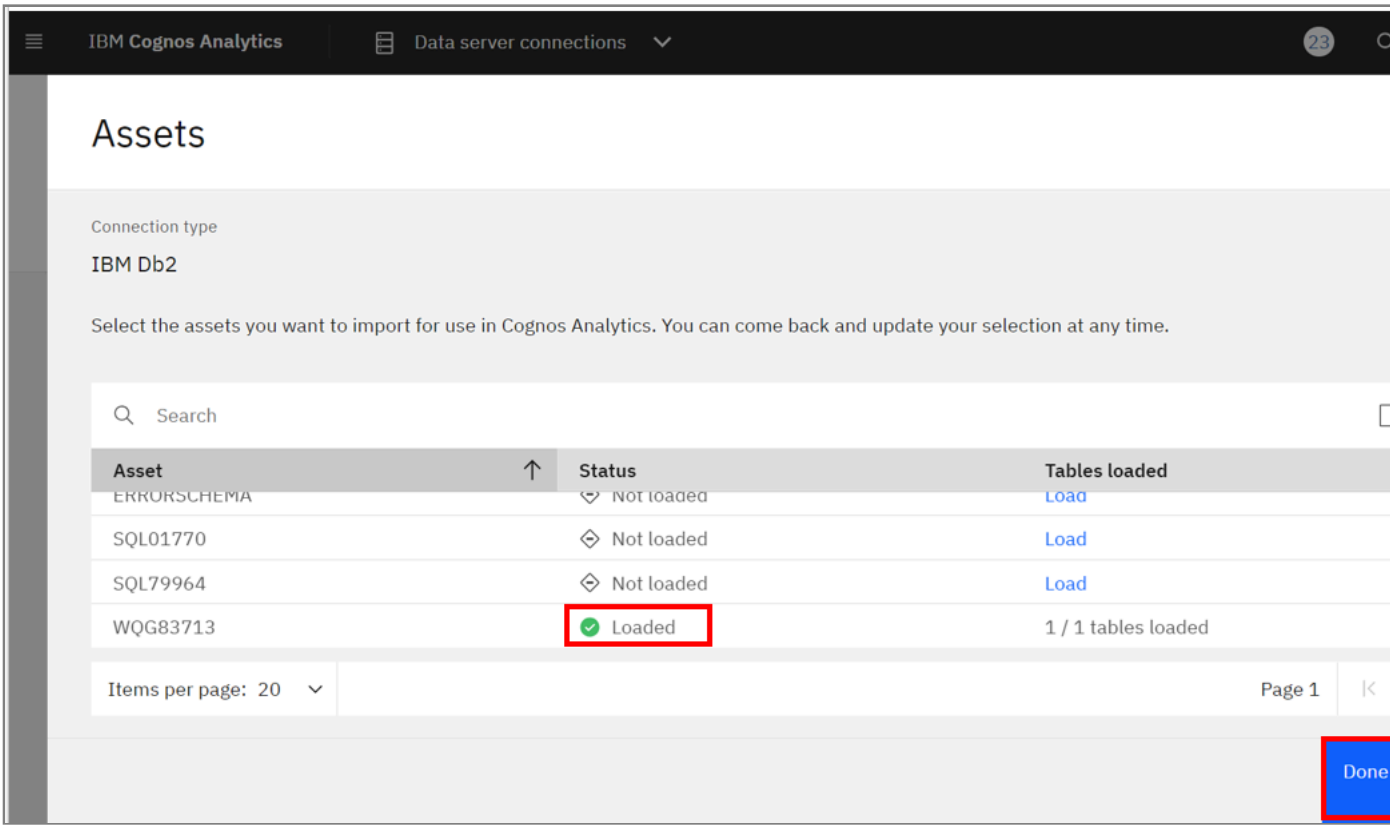



10. On the right side, click on the three dots and select **Assets** from the menu that appears.

11. Select the **schema** in which you have loaded the tables in DB2 and click on **Load**.

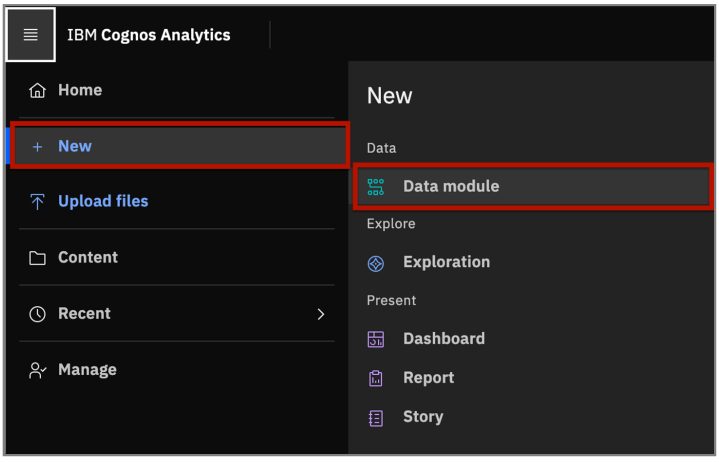



12. Once the data is loaded, you can see that how many tables available in the schema for analysis.



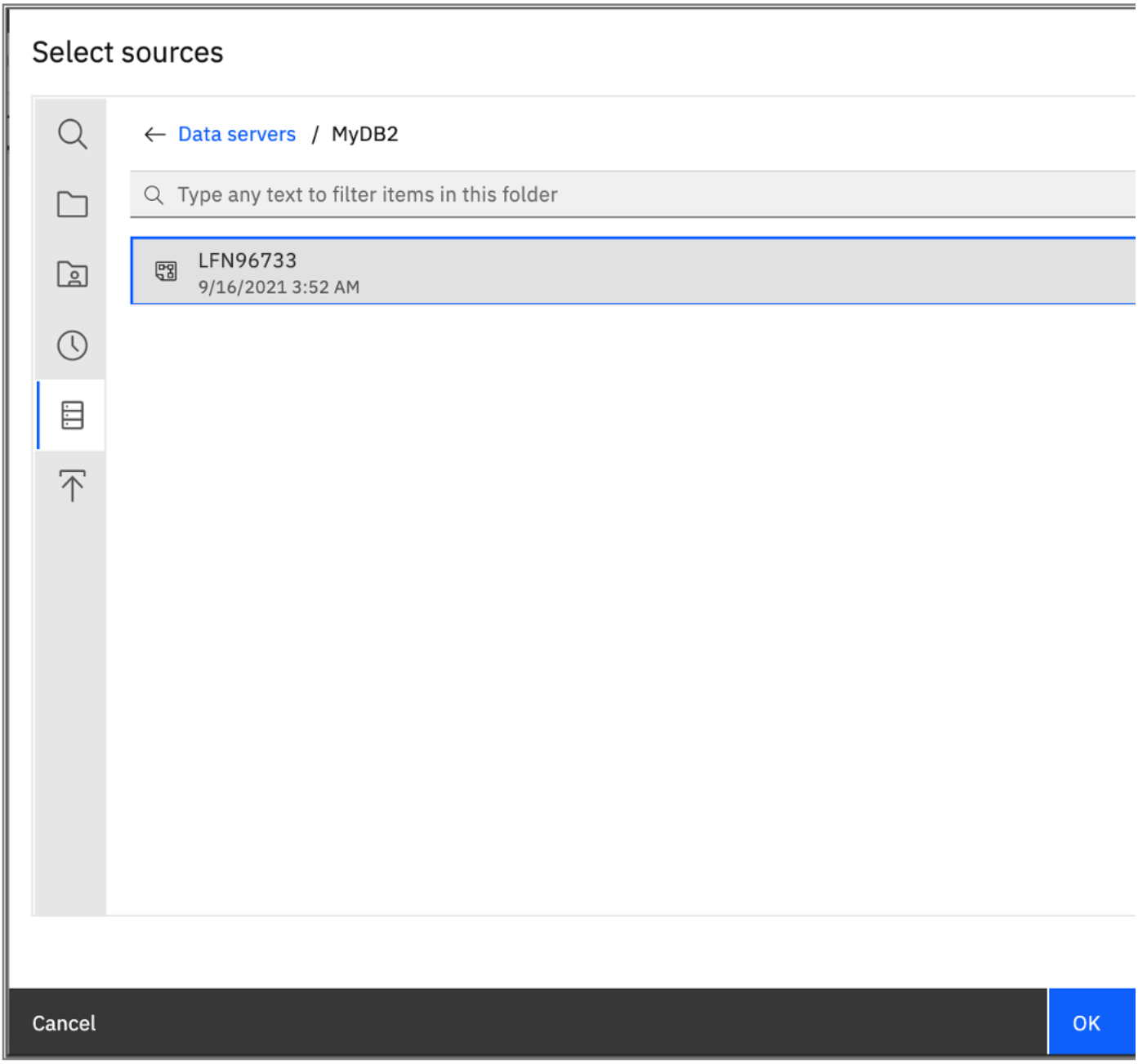

### Task 3 - Create Data Module in Cognos

1. From the menu, choose **New** and then from the submenu choose **Data Module**.

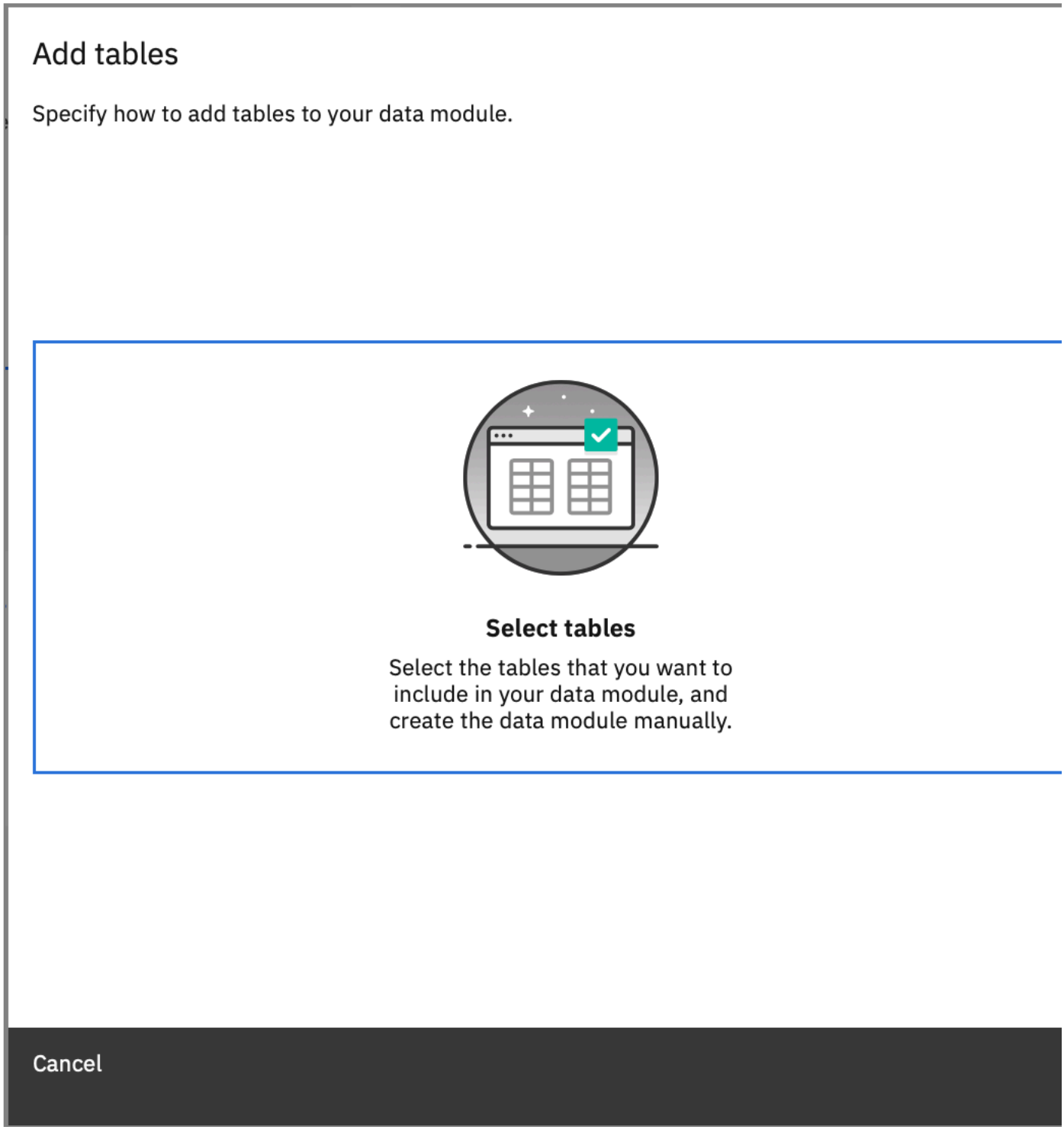



2. Click the **Data servers** icon and choose the **MyDB2** connection that we created in the previous task.

3. Choose the schema from where you want to load data.




4. Choose the **Select Tables** option and click **OK**.




5. It will list the tables available in the schema. For this lab, we will use the **Billing data** table. Choose the table and click on **OK**. If you want to view the data you may click on **Refresh**.

6. The **Data module** loaded with the data appears. Click on **Save**, once you see that the data is correctly loaded.

7. You can now save it with an appropriate name under **My Content**.

### Task 4 - Create Dashboard

1. From the IBM Cognos menu, choose, **New** and click on **Dashboard**.

2. Choose the **Tabbed** as shown in the following image.

3. Click on **Select Source** to choose the source for the template.

4. From the list, choose the data module we just created and click on **Add**.

### Task 5 - Visualization

You will now see the table listed on the left panel with all the attributes.

1. Drag and drop the **Billed Amount** on the template.

2. The total billed amount will now appear on the Dashboard. The size and position can be adjusted as per requirement and the text display can be edited and formatted by double-clicking on it.

3. Drag and drop **Billed Amount** and **Industry** onto the dashboard as shown in the following image. With this, we can visualize the build amount per industry.

4. Drag and drop **Billed Amount, Country and Industry** onto the dashboard as shown in the following image. This will generate a heat map of spending by country and by industry.

5. The finished dashboard will appear as in the following image.

6. Optionally, try to change the properties and settings to see how the dashboard changes. You can also observe the billed amount changing as you click on a region on the heat map or the bar graph.

### Credits

## Author(s)

Lavanya T S

## Changelog

| Date | Version | Changed by | Change Description |
|---|---|---|---|
| 2020-09-20 | 1.0 | Lavanya | Created the lab |
| 2021-10-07 | 1.1 | Steve Hord | Copy Edit lab |
| 2023-05-07 | 1.2 | Vladislav Boyko | Indented images and added pages |