



# Skills Network

## 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.

A screenshot of the IBM Cloud Service Credentials interface. At the top, it shows "Resource list / Db2-4y" with an "Active" status indicator and a "Add tags" button. Below this, there are five navigation options: "Manage", "Getting started", "Service credentials" (which is highlighted with a blue border), and "Connections". To the right of these options is a "Service credentials" section with the subtext: "You can generate a new set of credentials for cases where you want to manually connect an app or external consumer to an IBM Cloud service." Below this is a "Learn more" link and a search bar at the bottom labeled "Search credentials...".

Resource list /  
Db2-4y    Active    Add tags

Manage  
Getting started  
**Service credentials**  
Connections

Service credentials

You can generate a new set of credentials for cases where you want to manually connect an app or external consumer to an IBM Cloud service.

Learn more

Search credentials...

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

# Create credential

Name:

Service credentials-II

Role: ⓘ

Manager

Advanced options ▾

Cancel

Add

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 manually 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": "REDACTED",
    "username": "REDACTED"
  },
  "certificate": {
    "certificate_base64": "LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tCk1JSURFakN
3VUFN0iR4SERBYUJnT1YK0kFNTUUJwbENUU0JEYkc5MVpD0kVZWFEJowW1Ge1pYT
XdTaGN0TWpBd01aS1
FZRUUREQk5KUWswZ1EyeHZkV1FnUkdGMF1XSmhjM1Z6TU1JQk1qQU5CZ2txCmhraUc5dzBCQVF
FRkF
iYje4UKr4ZGwKTzRUL3FoUGMxMTREY1FUK0plRXdhdG13aGljTGxaQnF2QWFMb1hzbmhqSVFOMG01L0
3M3M1ZUSU5yYmx3cnRIRU1vM1JWTKv6SkNHYW5LSXdZMWZVSUtrCldNM1R0SD15cnFsSGN0Z2pIU1Fr
0Y3EKY21QcHNqdDBPTnI0YnhJMVRyUwxEemNiN1hMSFBxWW91SUprdnVzMUZvaTEySmRNM1MrK3labP
C9E0WZhamNNN01Wd2V4a01S0TNKR1FJREFRQUJvMU13C1VUQWRCZ05WSFEORUznUVV1Q3JZanFJQzc1
JQzc1VUpxVmZEMDh1ZWdqxDziUmN3RHdZRFZSMFRBUUgvQkFVd0F3RUIvekFOQmdrcWhraUc5dzBCQV
kRMb0tPd0hSRnFS0HgxZ2dRcGVEcFBnMk5SCKx3R08yek85SWZUMmhLaWd1d2orWnJ5SGGxxch1xQ0p
l1Ujd3ZFFuVju0TVU4aERvNi9sVHRMRVB2Mnc3V1NPS1FDK013ejgrTFJMdjVHSW5BN1JySWNhKwozMc
G5YWh6UG91cldYS1BoaGdXZ2J5CkNDcUdIK0NWNNq1eFg3b05NS3VNSUNqRVZndnNLWnRqeTQ5VW5:
xVkxuN3F3VG1TbD1TU05RPT0KLS0tLS1FTkQgQ0VSVE1GSUNBVEutLS0tLQo=",
  "name": "1cbbb1b6-3a1a-4d49-9262-3102a8f7a7c8"
},
  "composed": [
    "db2://lfn96733:d10xxWy1FWkzIe0Y@fbdb88901-ebdb-4a4f-a32e-9822b9fb237b.c
db?authSource=admin&replicaSet=rep1set"
  ],
  "database": "bludb",
  "host_ressources": [
    "fbdb88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu01qde00.databases.ap
  ],
  "hosts": [
    {
      "hostname": "fbdb88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu01qde00.d
atabases.ap
      "port": 32731
    }
  ],
  "jdbc_url": [
    "jdbc:db2://fbdb88901-ebdb-4a4f-a32e-9822b9fb237b.c1ogj3sd0tgtu01qde00.d
atabases.ap
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**.

The screenshot shows the IBM Cloud interface for managing a Db2 instance named "Db2-4y". The top navigation bar includes "IBM Cloud", a search icon, "Catalog", "Docs", and "Support". Below the navigation, the instance name "Db2-4y" is displayed with status "Active" and an "Add tags" button. A red box highlights the "Manage" button in the main content area. To the right, a "Getting started" section is shown with a blue button labeled "Go to UI" which is also highlighted with a red box. Other options in the sidebar include "Getting started", "Service credentials", and "Connections".

Resource list /

Db2-4y Active Add tags ↗

Manage

Getting started

Service credentials

Connections

Getting started

Where can I find my credentials?  
Get your username and password by c  
the left and selecting "New Credential"

Go to UI

Getting started d

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

The screenshot shows a software interface for managing data. At the top, there's a navigation bar with tabs: 'Load Data' (which is highlighted with a red border), 'Load History', 'Tables', 'Views', and 'Index'. On the left, there's a vertical sidebar with several icons: a grid icon (highlighted with a red border), a SQL icon, a file icon, a key icon, a cloud icon, a cube icon, a document icon, and a lightbulb icon. The main area is titled 'Load Data' and shows the following options: 'Source' (selected, indicated by a blue circle), 'Target' (indicated by an empty circle), and 'Define' (also indicated by an empty circle). Below this, a message says 'You are loading the file'. There are three data source options listed: 'My Computer' (described as 'A single delimited text file (CSV) without header row.'), 'Amazon S3', and 'Cloud Object Storage'. To the right, there's a large area labeled 'File selection' with a dashed rectangular border and a 'Drag' placeholder inside.

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.



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



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 credentials and launch **Cognos Analytics**.



2. Click the hamburger 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:

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



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**.

*If there is only one table in your schema, you will be redirected directly to step 6.*



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

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