Cloud Developer Certification Preparation

Exercise 6.3:
Managing instances of the IBM Bluemix data services

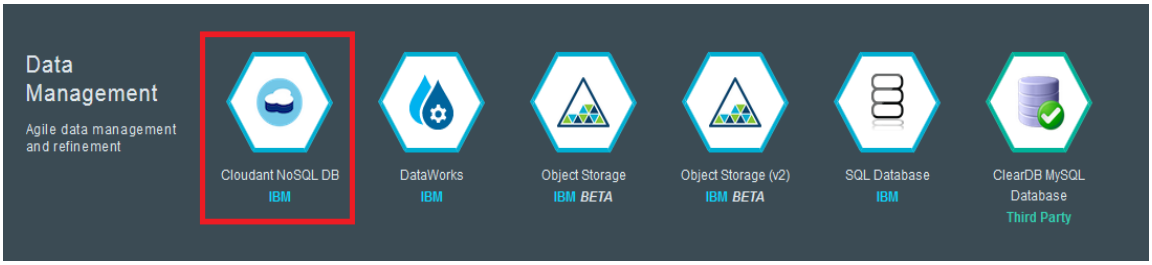
Exercise 6.3: Managing instances of the IBM Bluemix data services

In this exercise, you'll learn the basics of managing the following data services in IBM Bluemix.

- Cloudant NoSQL Database
- dashDB
- SQL Database

Start the Cloudant database

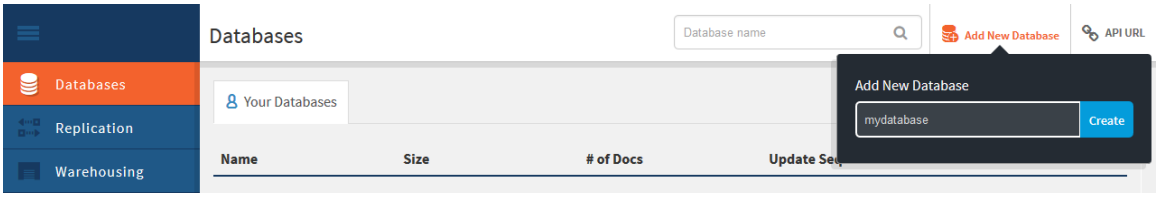
1. From a browser, log in to Bluemix: http://bluemix.net.
2. Make sure you're in the Dashboard tab. If you're not, click **Dashboard** at the top of the page.
3. Click **USE SERVICES OR APIS**.
4. Scroll down to the **Data Management** section and click **Cloudant NoSQL DB.**



5. Under **App**, select **Leave unbound**.
6. Click **CREATE** to create a new instance of Cloudant NoSQL DB.
7. Click **Launch when the service** landing page appears to launch the dashboard.

Create a database

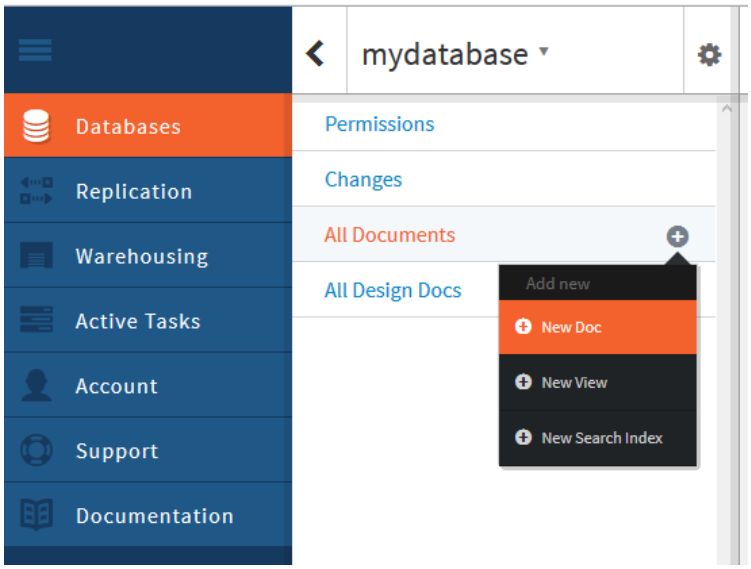
1. From the dashboard, click **Add New Database**, enter `mydatabase` as the name, and click **Create.**



You'll see the administration window for the new database.

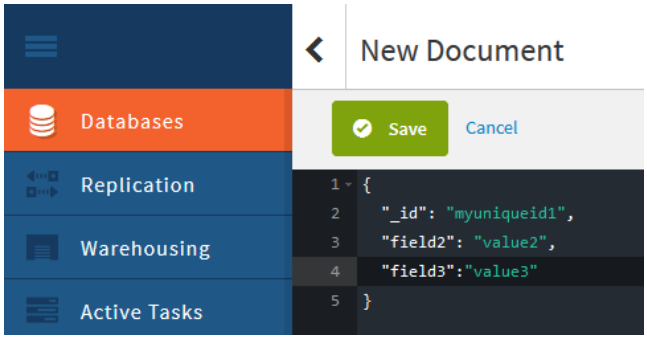
Add data to an existing database

1. Click the **+** icon next to **All Documents** and select **New Doc** from the context menu.



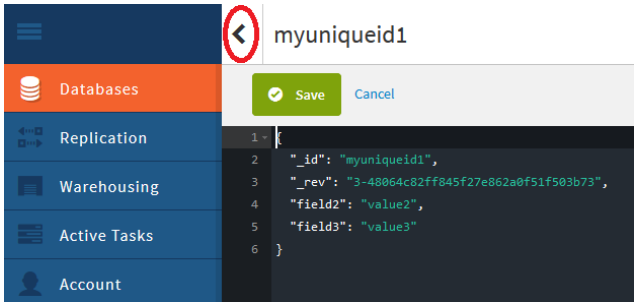
A new JSON document appears with a single attribute named _**id**. This is the unique identifier of your new document.

2. Modify the **_id** value and add the fields **field2** and **field3** as shown:



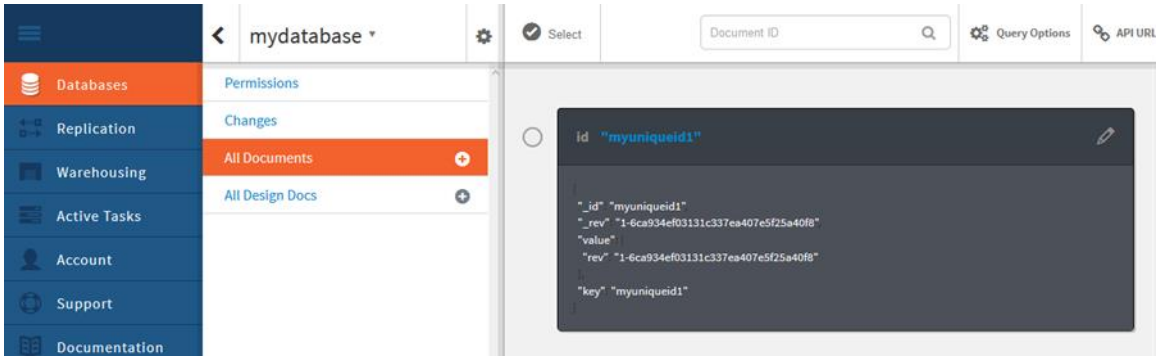
3. Click **Save** to save your changes.

4. Click the **Arrow** icon to go back to the database view.

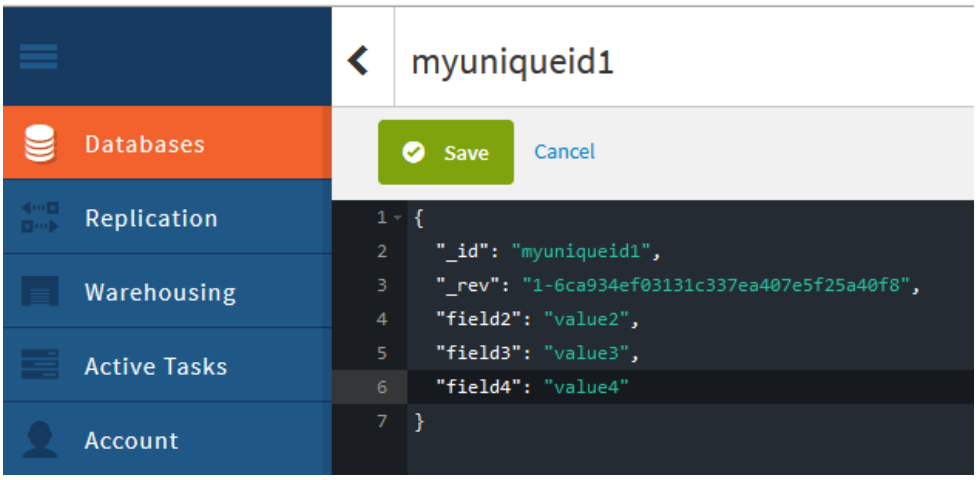


Edit documents in a database

1. From the database view in the dashboard, click **All Documents.** A summary of the documents in the database appears on the right.

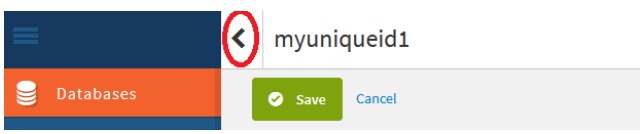


2. Click the **Pencil** icon of your only document to edit it. Add the field **field4** as shown:



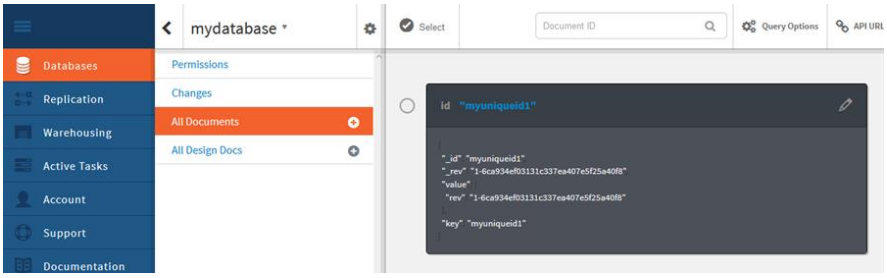
3. Click **Save** to save your changes.

4. Click the **Arrow** icon to go back to the database view.



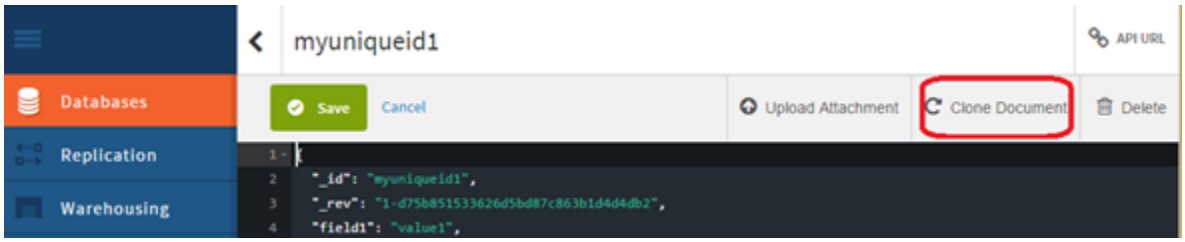
Clone documents in a database

1. From the database view in the dashboard, click **All Documents.** A summary of the documents in the database appears on the right.



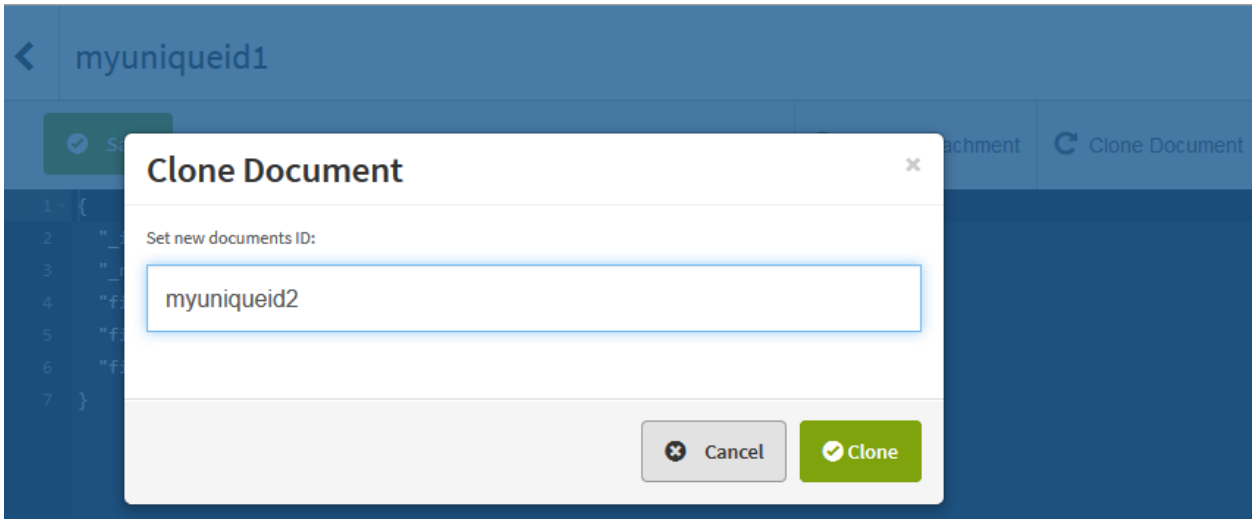
2. Click the **Pencil** icon of your only document to edit it.

3. Click **Clone Document** in the document editor.



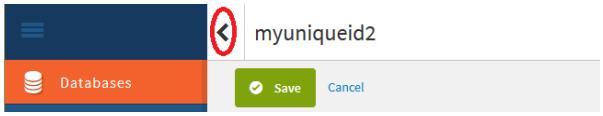
You'll be prompted to accept a system generated unique id for the new clone or to provide your own value.

4. Change the id to `myuniqueid2`.



5. Click **Clone**. Your clone is added to the database.

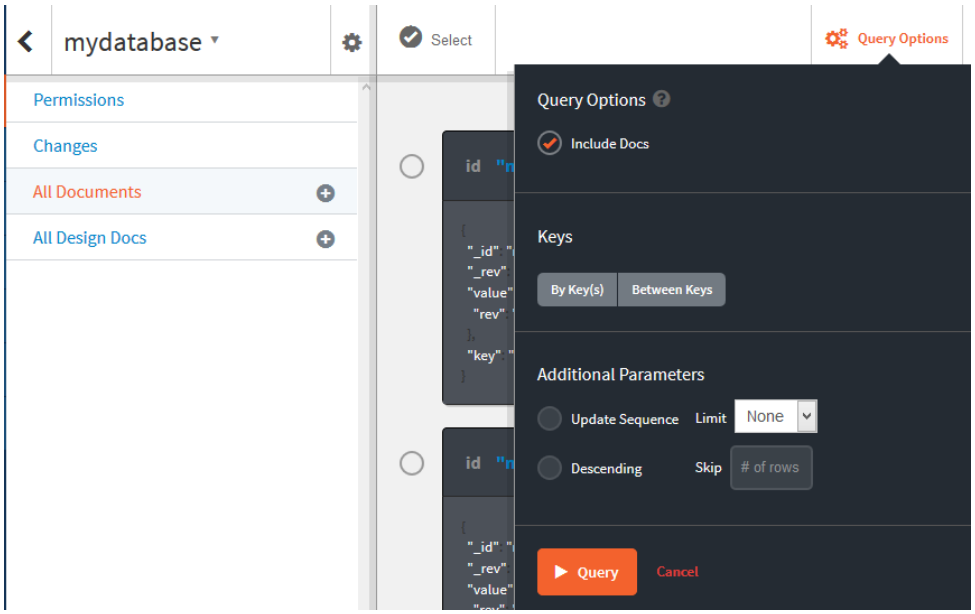
6. Click the **Arrow** icon to go back to the database view.



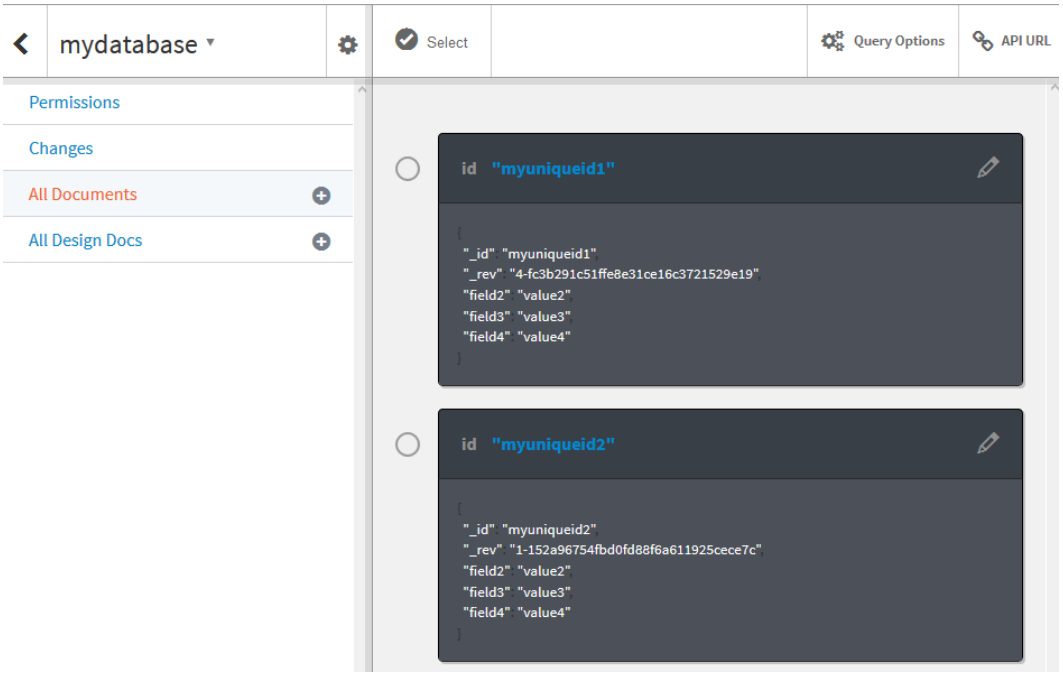
Create a simple query of all documents in a database

1. From the database view in the dashboard, click **All Documents**. A summary of the documents in the database appears on the right.

2. Click **Query Options**, select **Include Docs,** and click **Query**.



3. Verify that all the fields in your two documents are present.

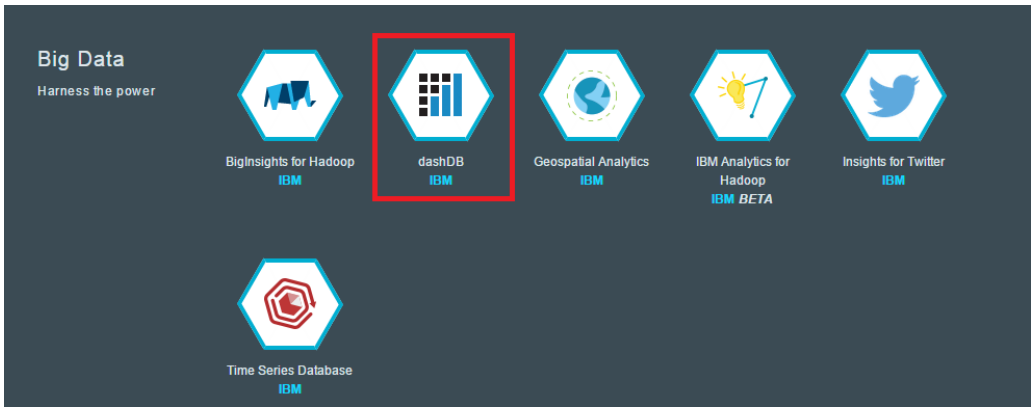


Exercise 6.3.1: Managing instances of dashDB

In this section, you'll learn the basics of managing the dashDB service in IBM Bluemix.

Launch the dashDB Dashboard

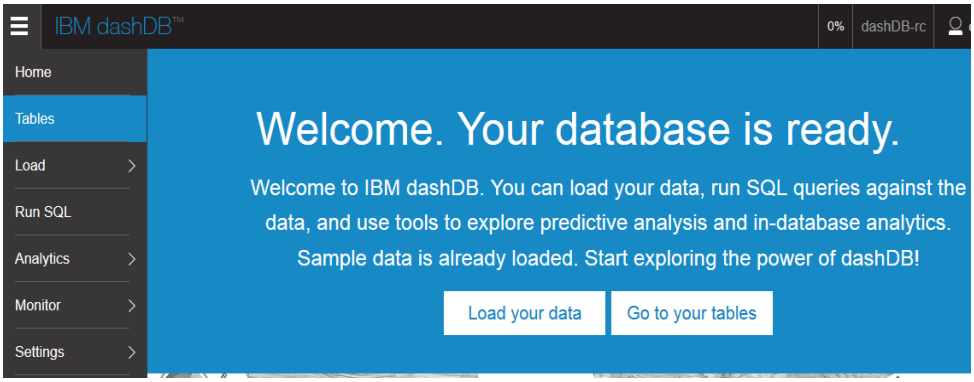
1. From a browser, log in to Bluemix: http://bluemix.net.
2. Make sure you're in the Dashboard tab. If you're not, click **Dashboard** at the top of the page.
3. Click **USE SERVICES OR APIS**.
4. Scroll down to the **Big Data** section and click **dashDB.**



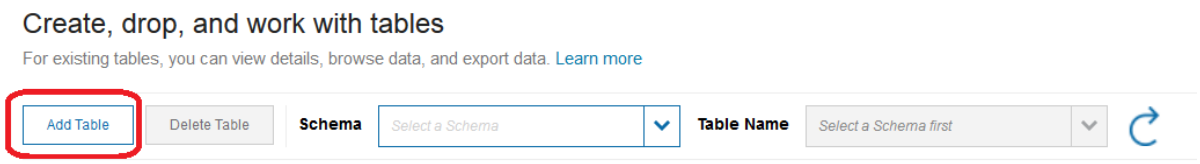
5. Under **App**, select **Leave unbound**.
6. Click **CREATE** to create a new instance of dashDB.
7. Click **Launch** when the service's landing page shows the dashDB console.

Create a new table

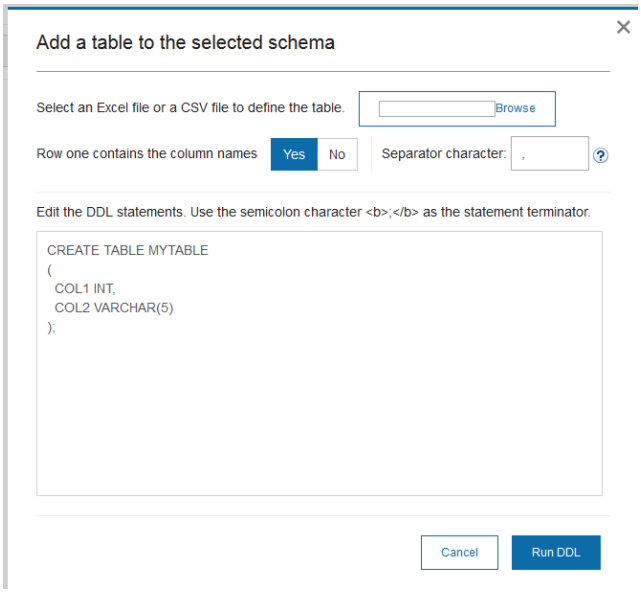
1. From the dashDB console, click **Tables.**



2. Click **Add Table**.



Some sample DDL to create a table is generated for you.

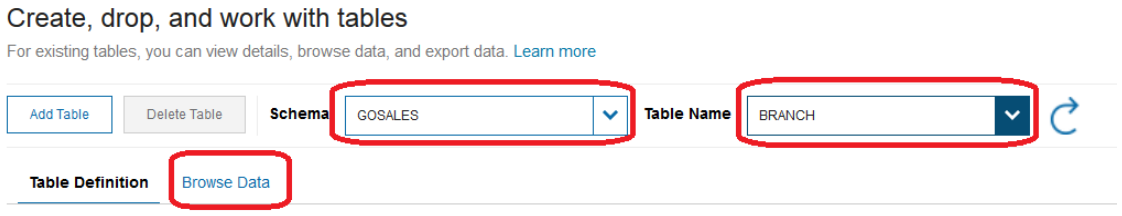


3. Use the sample DDL for this exercise. Click **Run DDL.**

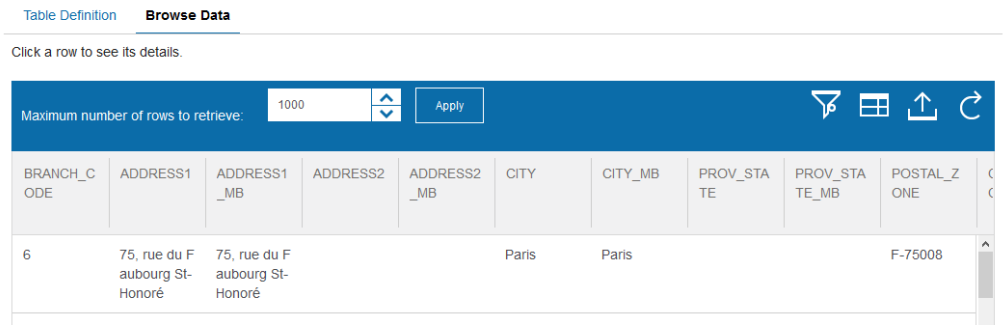
4. Click **OK** in the dialog that indicates the DDL ran successfully and then click **Cancel** to exit the dialog with the sample DDL.

Browse an existing table

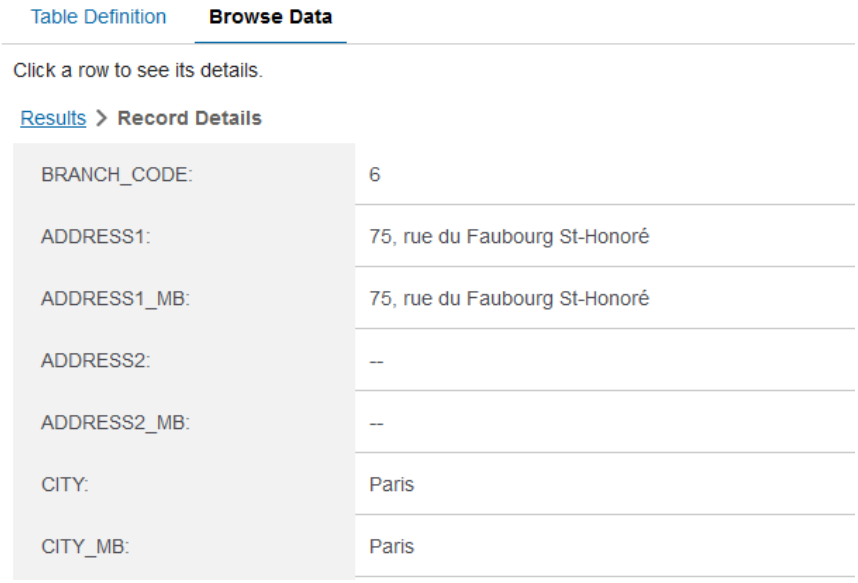
1. In the dashDB console, select **GOSALES** as the **Schema** and **BRANCH** as the **Table Name** and then click **Browse Data.**



2. Verify that the data in the BRANCH table is displayed.

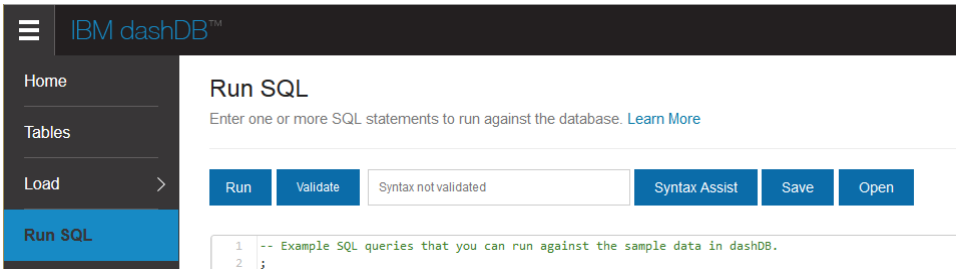


3. Verify that you can click a row to see all the data for the row.



Run SQL Scripts

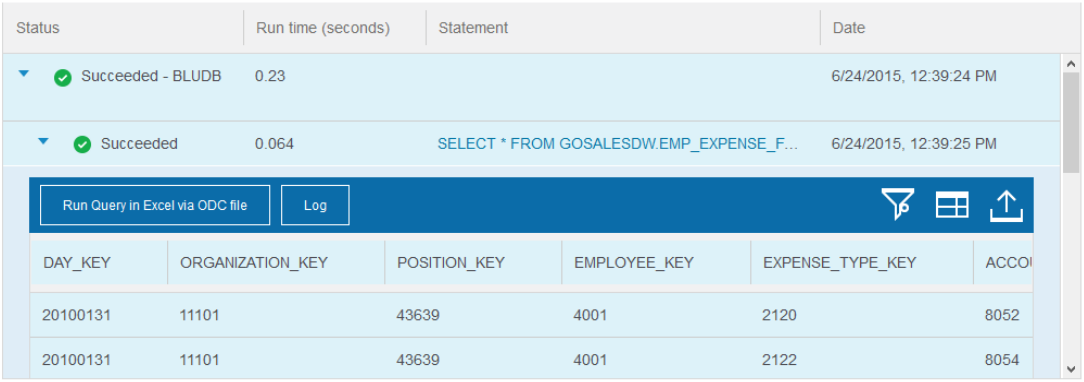
1. In the dashDB console, click **Run SQL** in the left navigation.



A sample script is preloaded that runs against the sample data in dashDB.

2. Click **Run** to run the sample script.

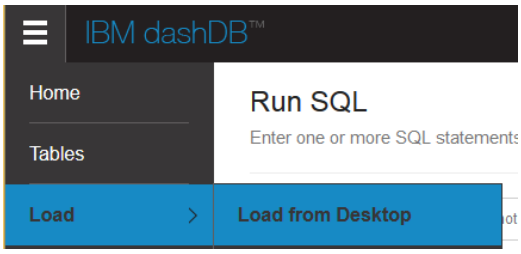
3. Navigate through the results to see the data that is returned.



Import CSV data

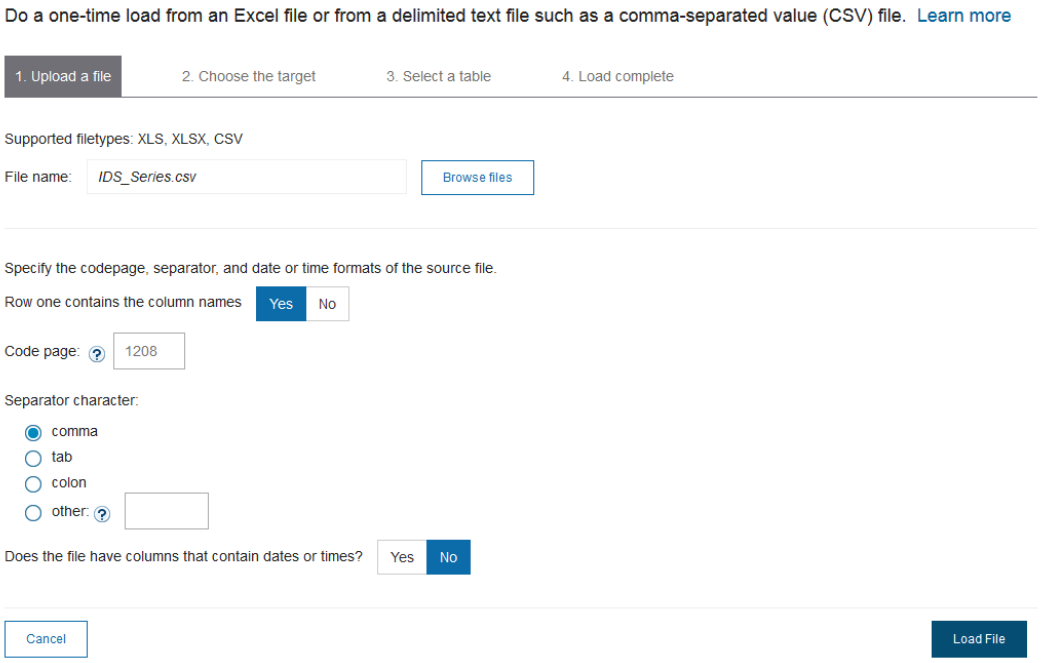
1. Download the file IDS_CSV.zip file to your local machine from http://databank.worldbank.org/data/download/IDS_CSV.zip. This file contains data that is maintained by the World Bank and has data about each country's external debt.

2. Extract the contents of the file into a folder of your choice.



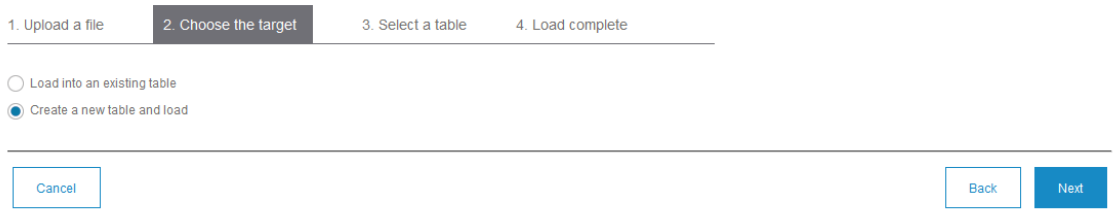
3. In the dashDB console, click **Load > Load from Desktop.**

4. Click **Browse files**, select **IDS_Series.csv**, which is one of the files in the ZIP file that you just downloaded, and click **Load File.**



5. Click **Next.**

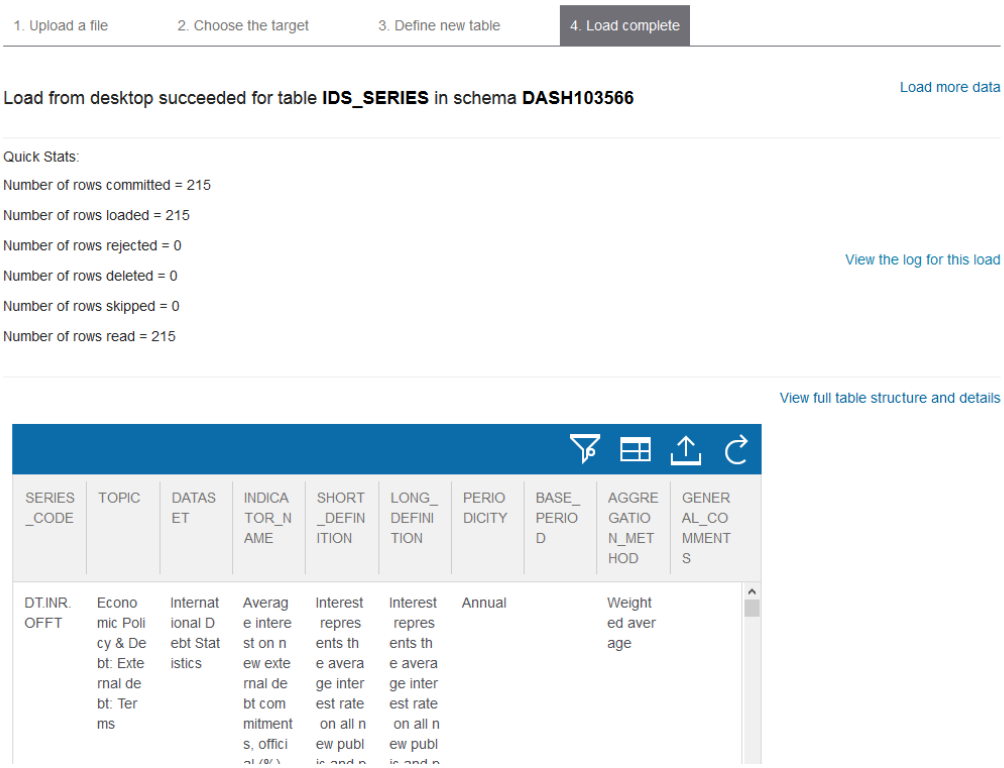
6. Select **Create a new table and load**.



7. Click **Next**.

8. Accept the defaults for the new table definition and click **Finish**. You'll see a preview of the data in the new table and the number of rows that were imported.

Exercise 6.3: Using IBM Bluemix data services

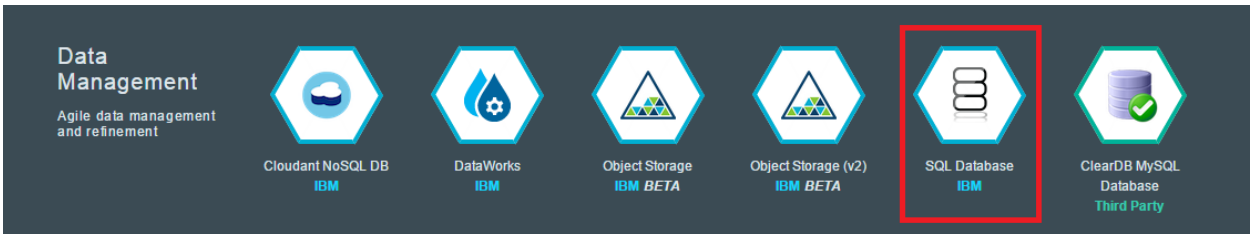


Exercise 6.3.2: Managing instances of an SQL database

In this section you'll go through the basics of managing the SQL Database service in IBM Bluemix.

Launch the SQL Database console

1. From a browser, log in to Bluemix: http://bluemix.net.
2. Make sure you're in the Dashboard tab. If you're not, click **Dashboard** at the top of the page.
3. Click **USE SERVICES OR APIS**.
4. Scroll down to the **Data Management** section and click **SQL Database.**

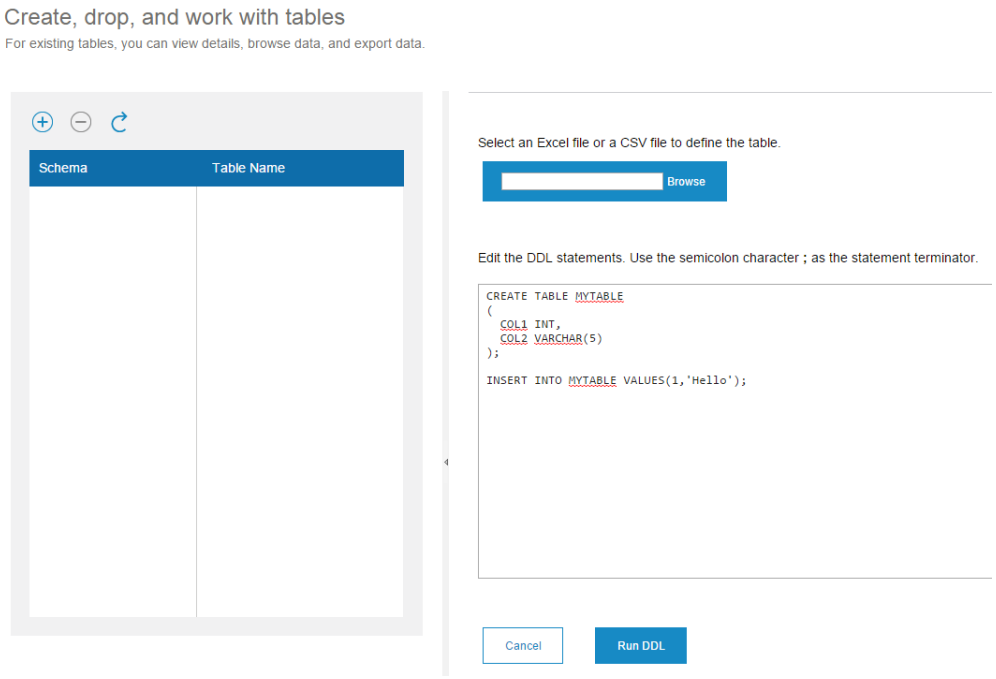


5. Under **App**, select **Leave unbound**.
6. Click **CREATE** to create a new instance of SQL Database.
7. Click **Launch** when the service landing page appears to launch the dashboard.

Create a new table

1. From the SQL Database console, click **Work with Tables.**
2. Click the **+** icon to enter the SQL DDL to create a new table. Some example DDL is created. Use that DDL and add a line to insert some data. Add the following line:

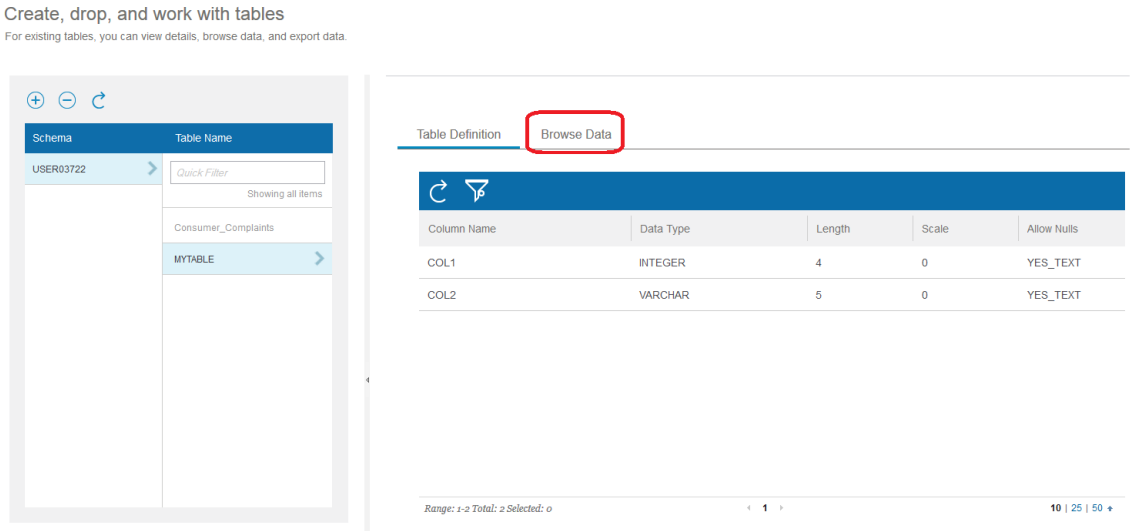
```
INSERT INTO MYTABLE VALUES(1,'Hello');
```



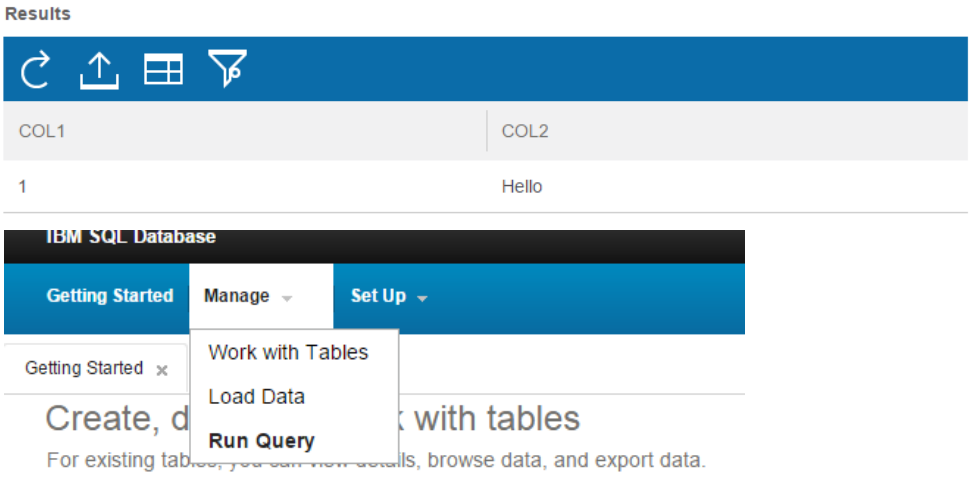
3. Click **Run DDL** to create the table.

Browse an existing table

1. In the SQL Database console, select your schema and **MYTABLE** as the **Table Name.**
2. Click **Browse Data**.

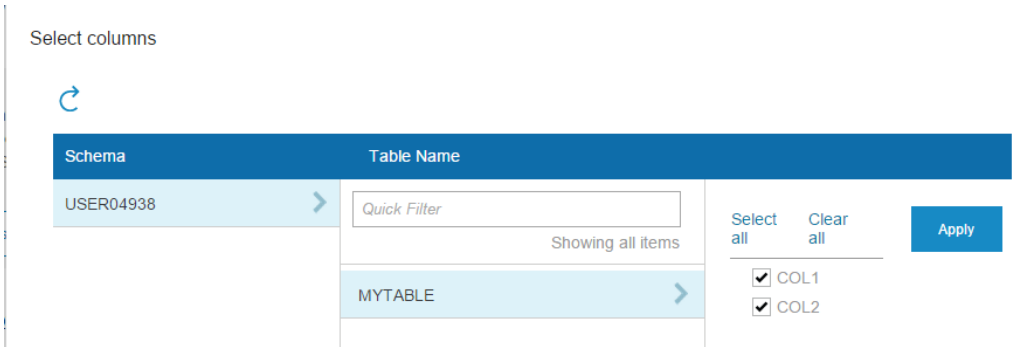


3. Verify that your single row of data is displayed.



Run SQL Scripts

1. From the SQL Database console navigation menu, click **Manage > Run Query.**
2. Click **Select Tables and Columns**.
3. Select your schema and your table and verify that all columns are selected. Click **Apply.**
4. Click **Run Query**.
5. Verify that the query results are returned.



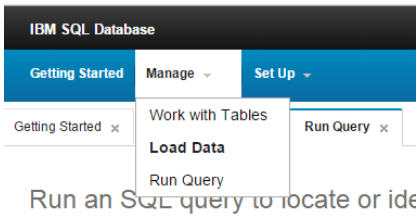
Import CSV data

If you've already downloaded the IDS_CSV.zip file, skip to Step 3.

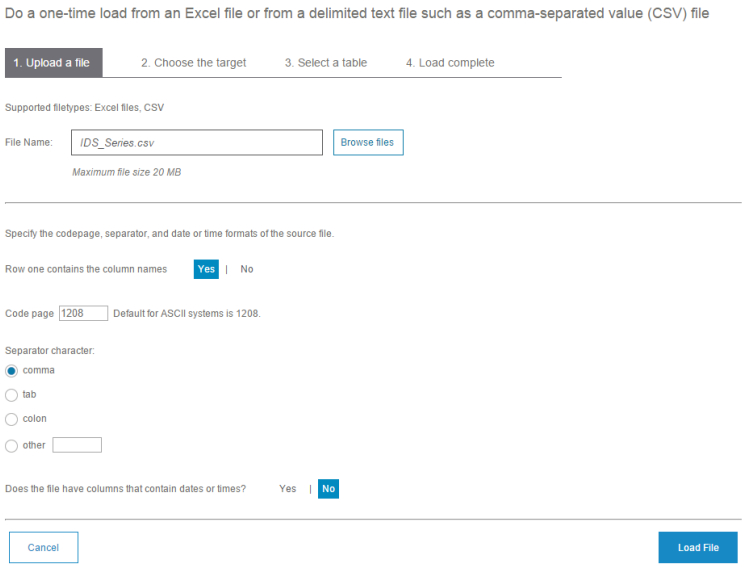
1. Download the file **IDS_CSV.zip** to your local machine from http://databank.worldbank.org/data/download/IDS_CSV.zip. This file contains data that is maintained by the World Bank and has data about each country's external debt.

2. Extract the contents of the file into a folder of your choice.

3. In the SQL Database console select **Manage > Load Data.**

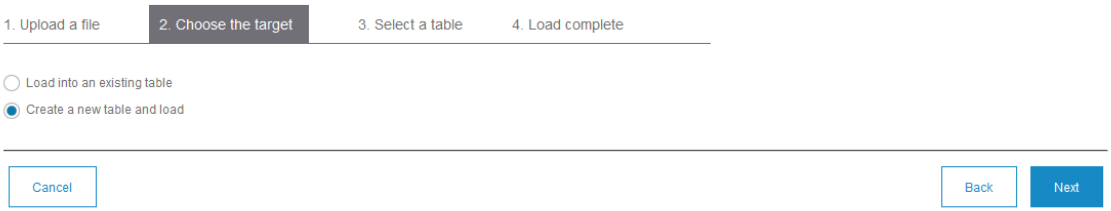


4. Click **Browse files,** select **IDS_Series.csv,** and click **Load File.**



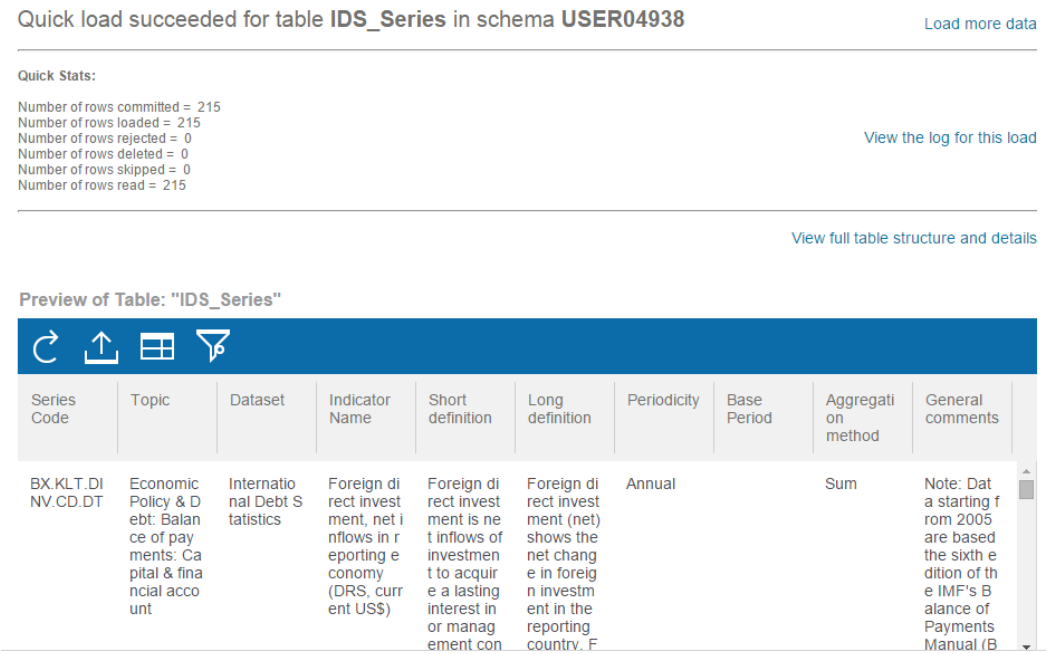
5. Click **Next.**

6. Select **Create a new table and load**.



7. Click **Next**.

8. Accept the defaults for the new table definition and click **Finish.** You'll see a preview of the data in the new table and the number of rows that were imported.



Now, you've learned the basics of managing the following data services in IBM Bluemix:

- Cloudant NoSQL Database
- dashDB
- SQL Database