Hands-on Lab: Dashboards in Cloudant

Estimated time needed: **30** minutes

Objectives

After completing this lab you will be able to:

- Create a database through the Cloudant dashboard
- Perform simple operations, such as inserting a document and querying data
- Replicate, or copy data, from one database to another
- Monitor your active tasks and your instance to detect potential issues

Prerequisite

In order to complete this lab, you will need to create an instance of Cloudant on IBM Cloud. If you haven't yet created one, you can create one by referring to the Create an Instance of IBM Cloudant lab.

Note: While working on this lab, you may be prompted to login when ever your session expires. Use your credentials to authentiate. This may happen when you step out or leave your Cloudant session unattented.

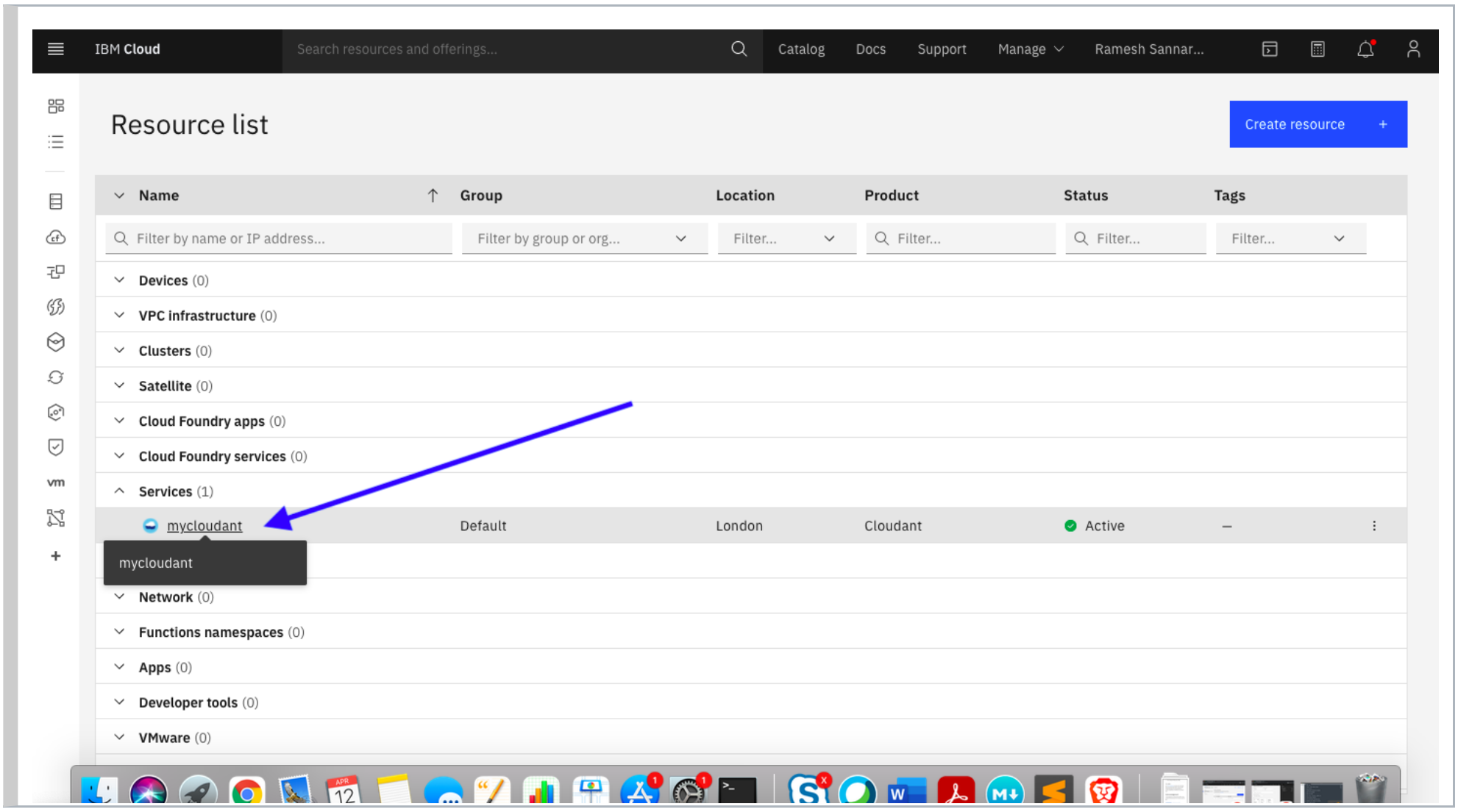
Exercise 1 - Launch Cloudant Dashboard

Step 1: Click on cloud.ibm.com/resources.

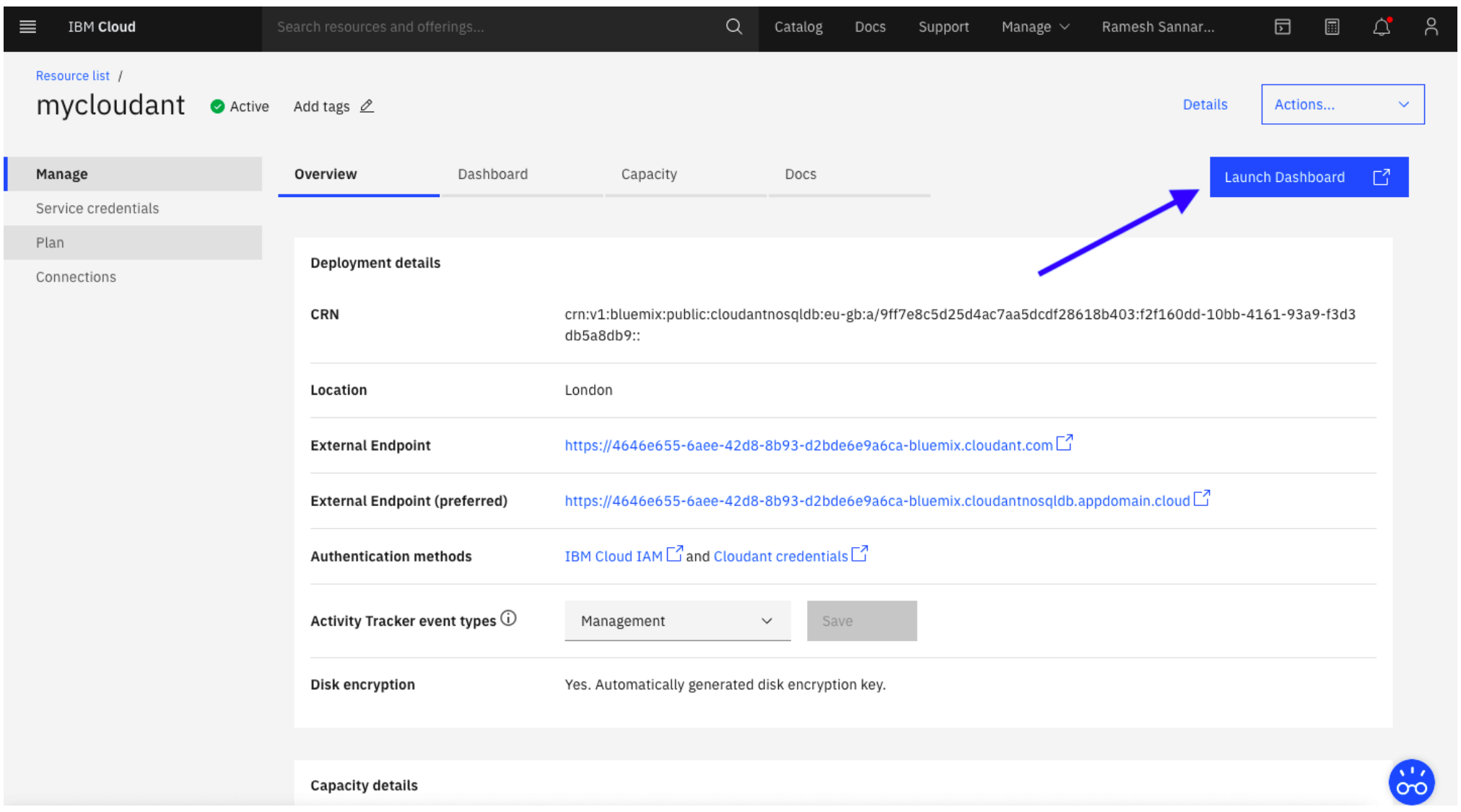
Step 2: Click on the Services chevron.

Step 3: Click on your instance of Cloudant.

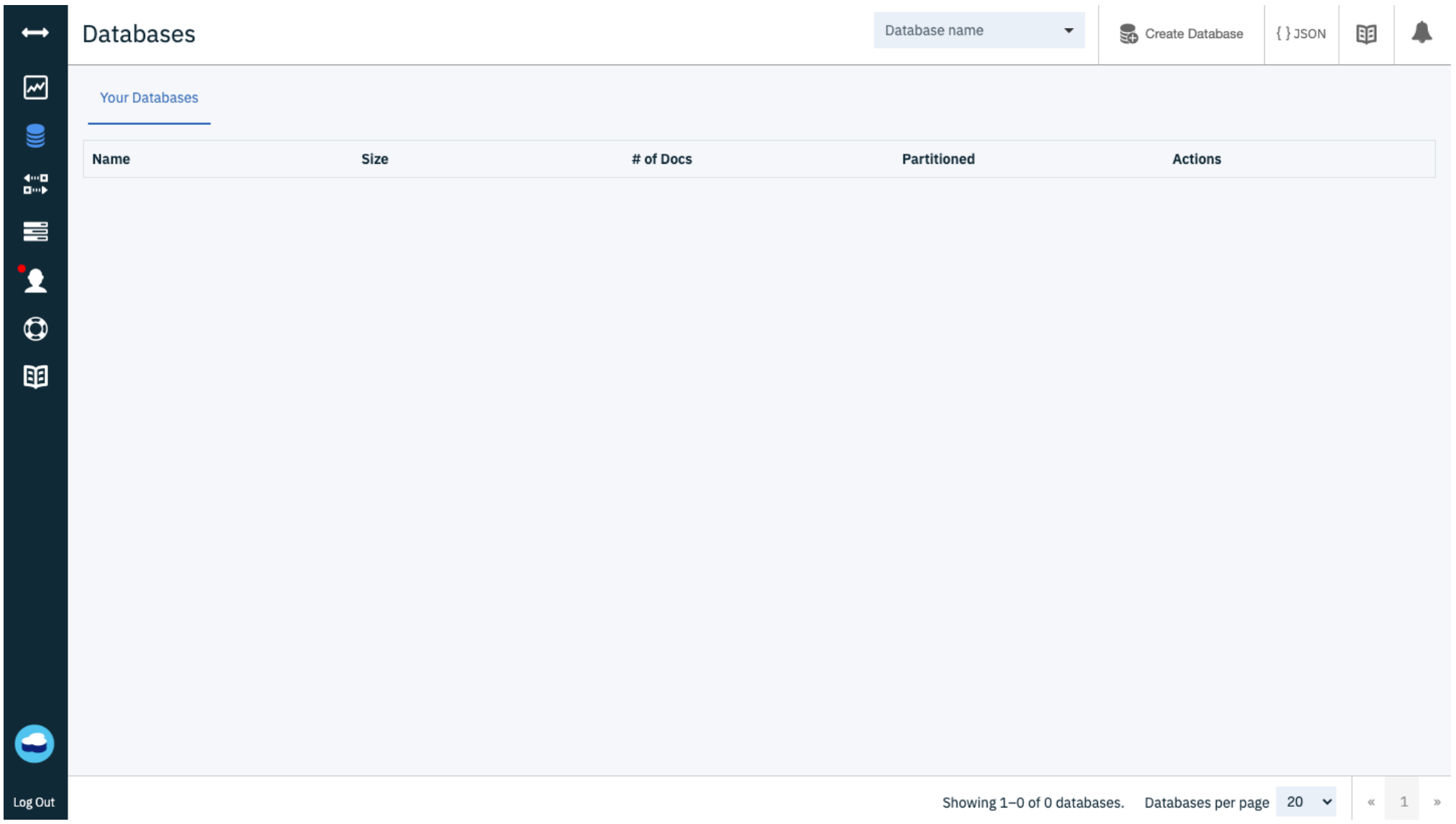
▼ Click here for Hint



Step 4: Click on `Launch Dashboard`.

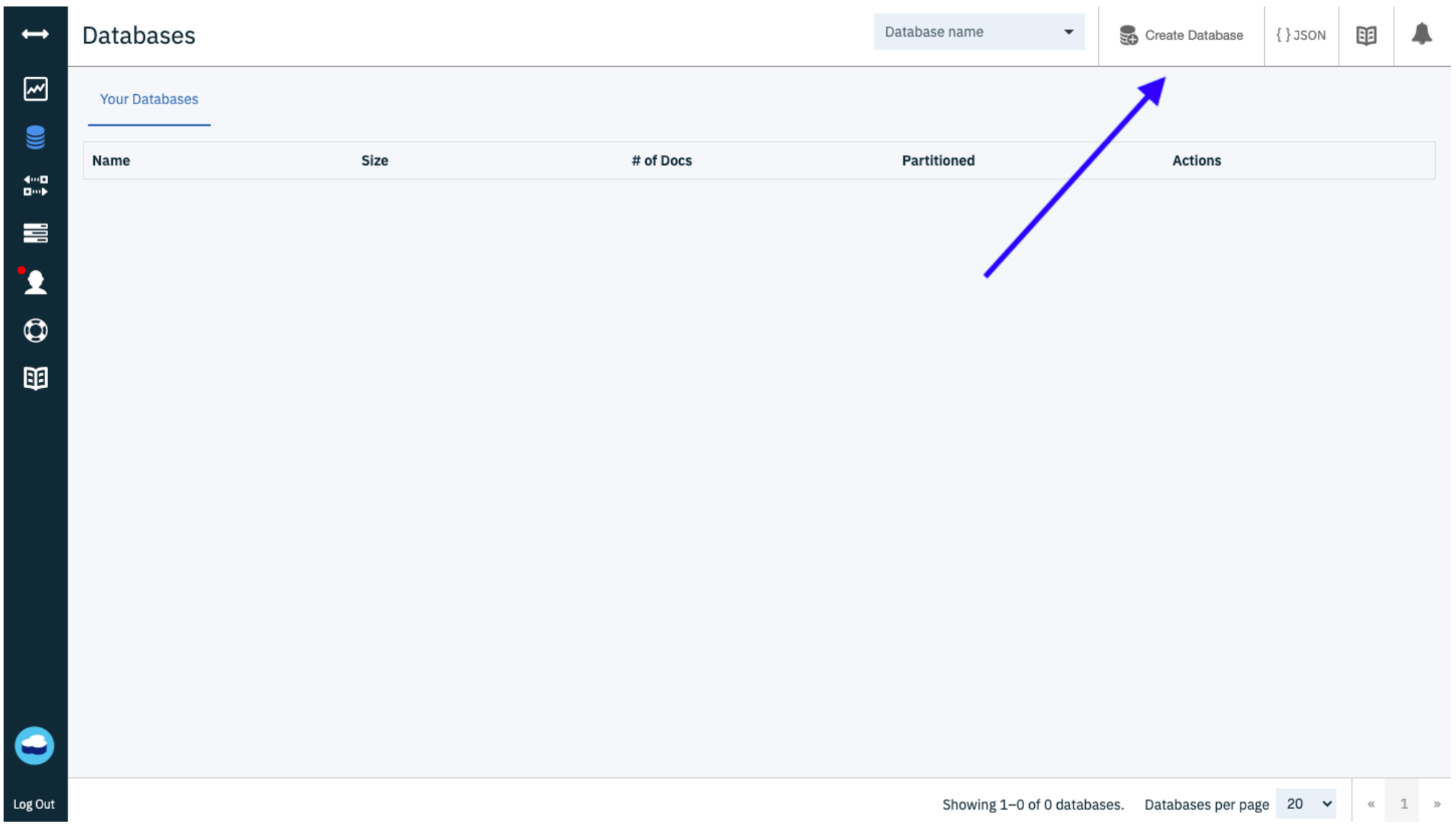


The Cloudant dashboard looks like this.



Exercise 2 - Create a database

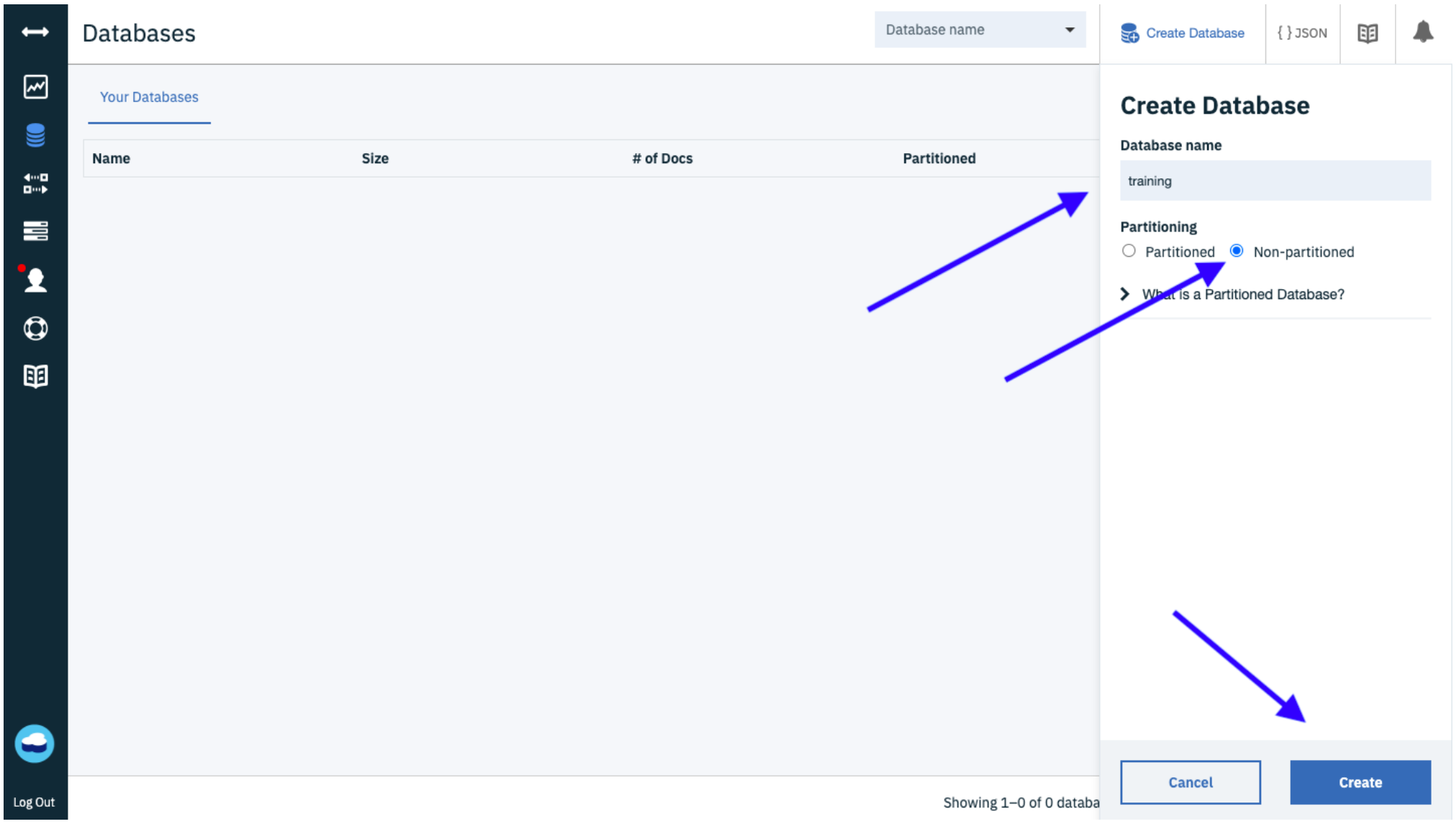
Step 1: Click on `Create Database`.



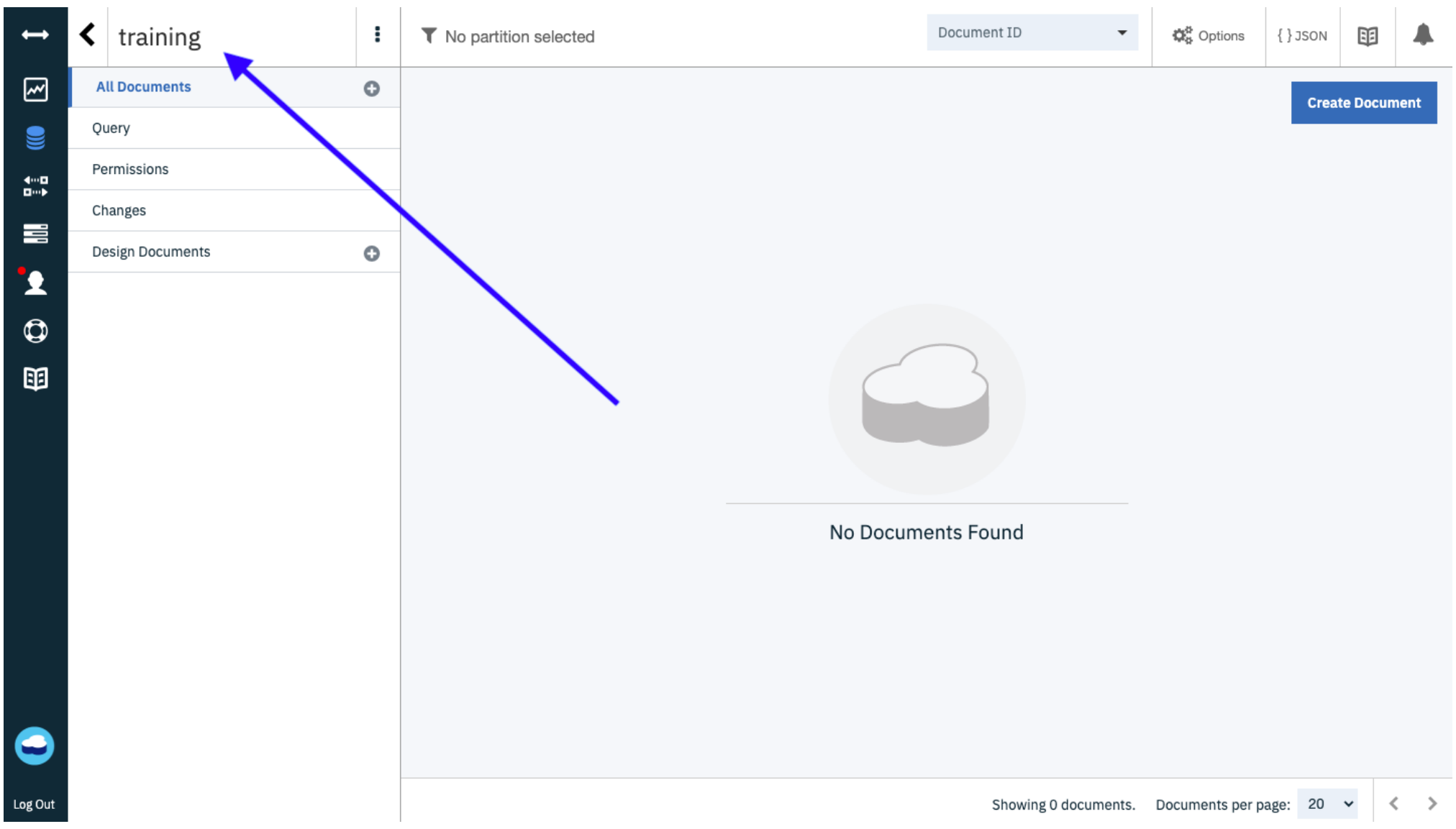
Step 2: Enter *training* as the name of the database.

Step 3: Select 'Non-partitioned'.

Step 4: Click on `Create`.

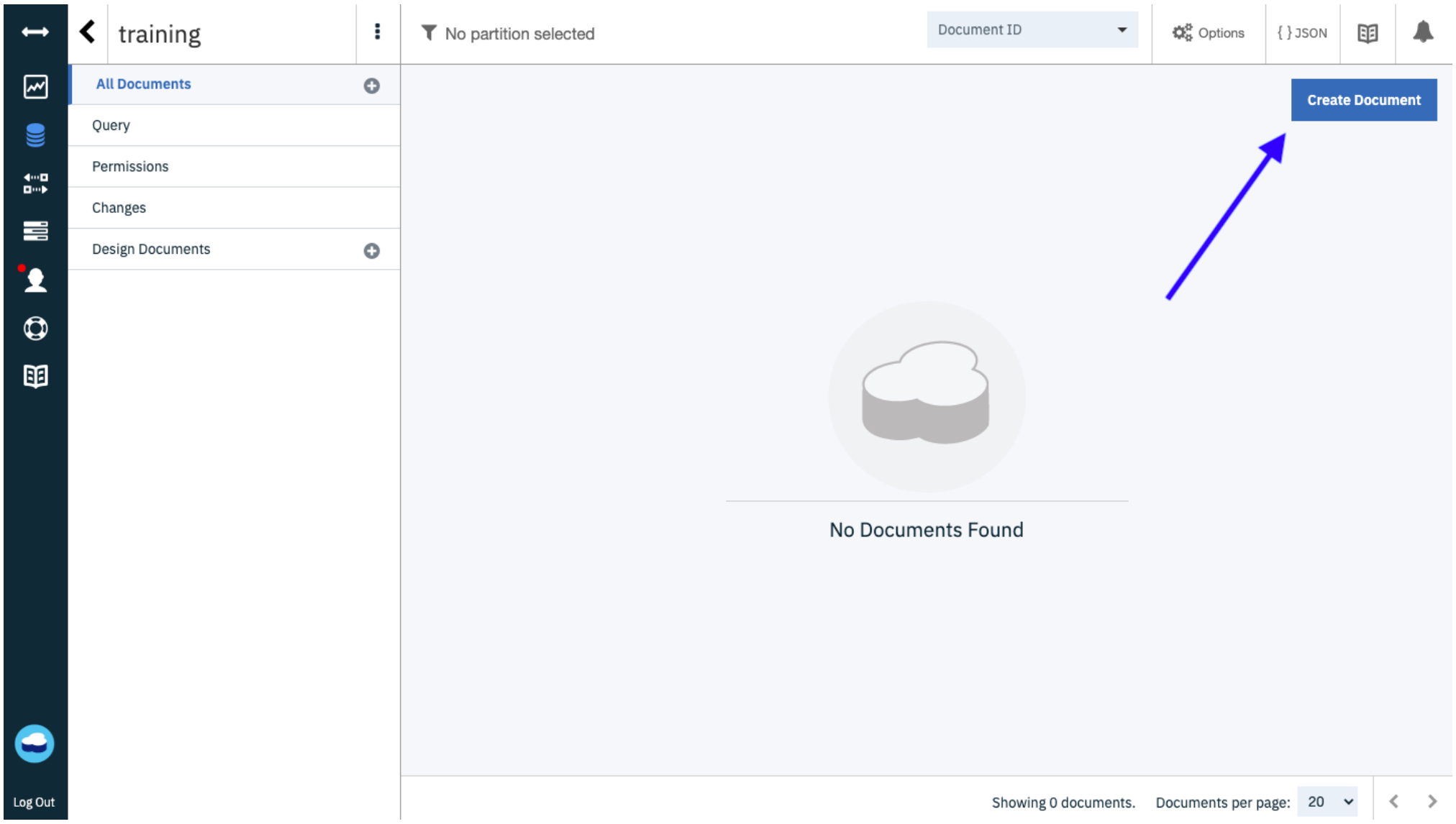


The database will be created. You should see a screen like this.



Exercise 3 - Perform a simple insert

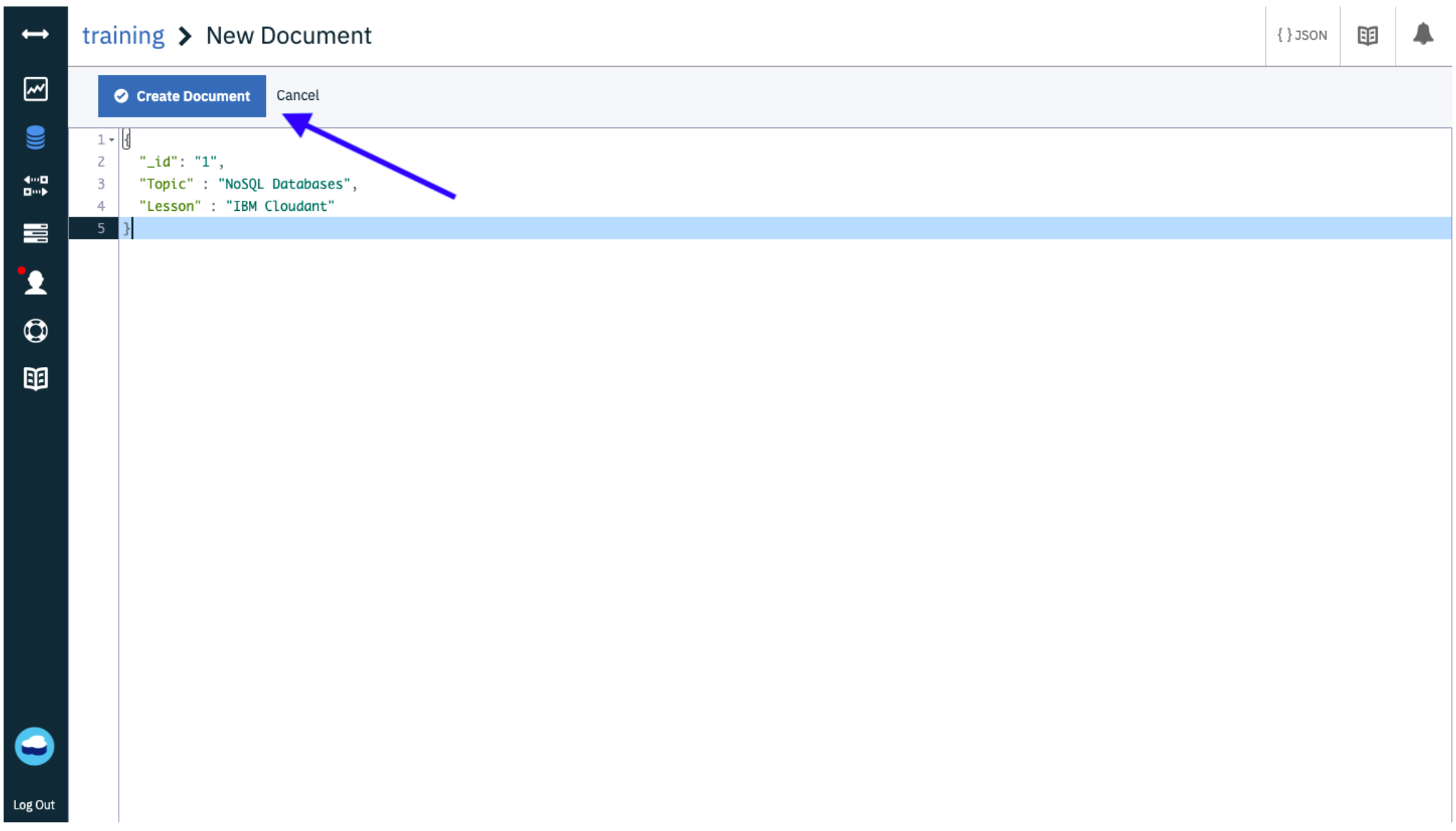
Step 1: Click on `Create Document`.



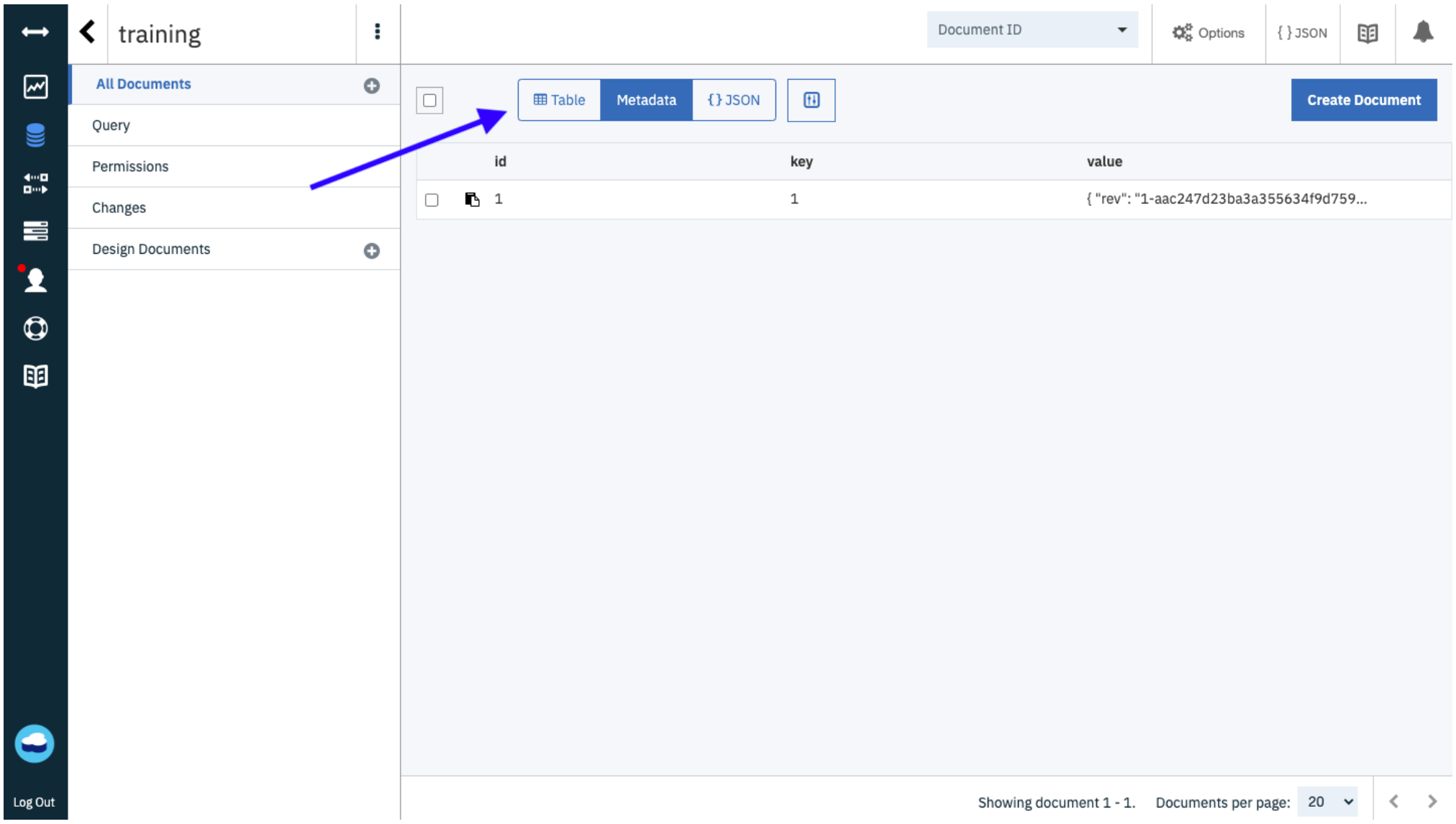
Step 2: Copy the below given JSON document and replace the default sample document given on the page.

```
{
  "_id": "1",
  "Topic" : "NoSQL Databases",
  "Lesson" : "IBM Cloudant"
}
```

Step 3: Click on `Create Document`

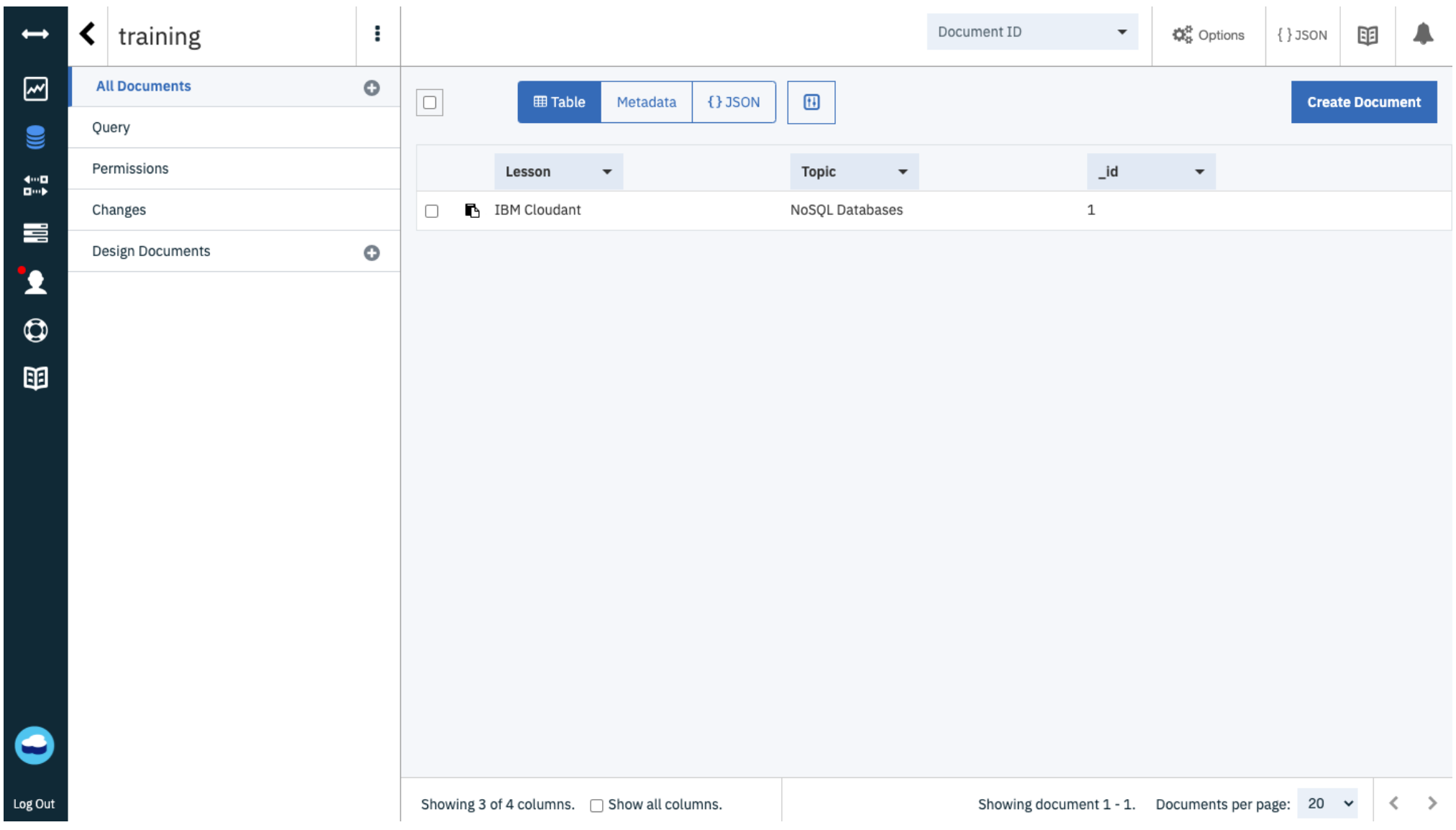


The document is created, and you should see a screen like this.



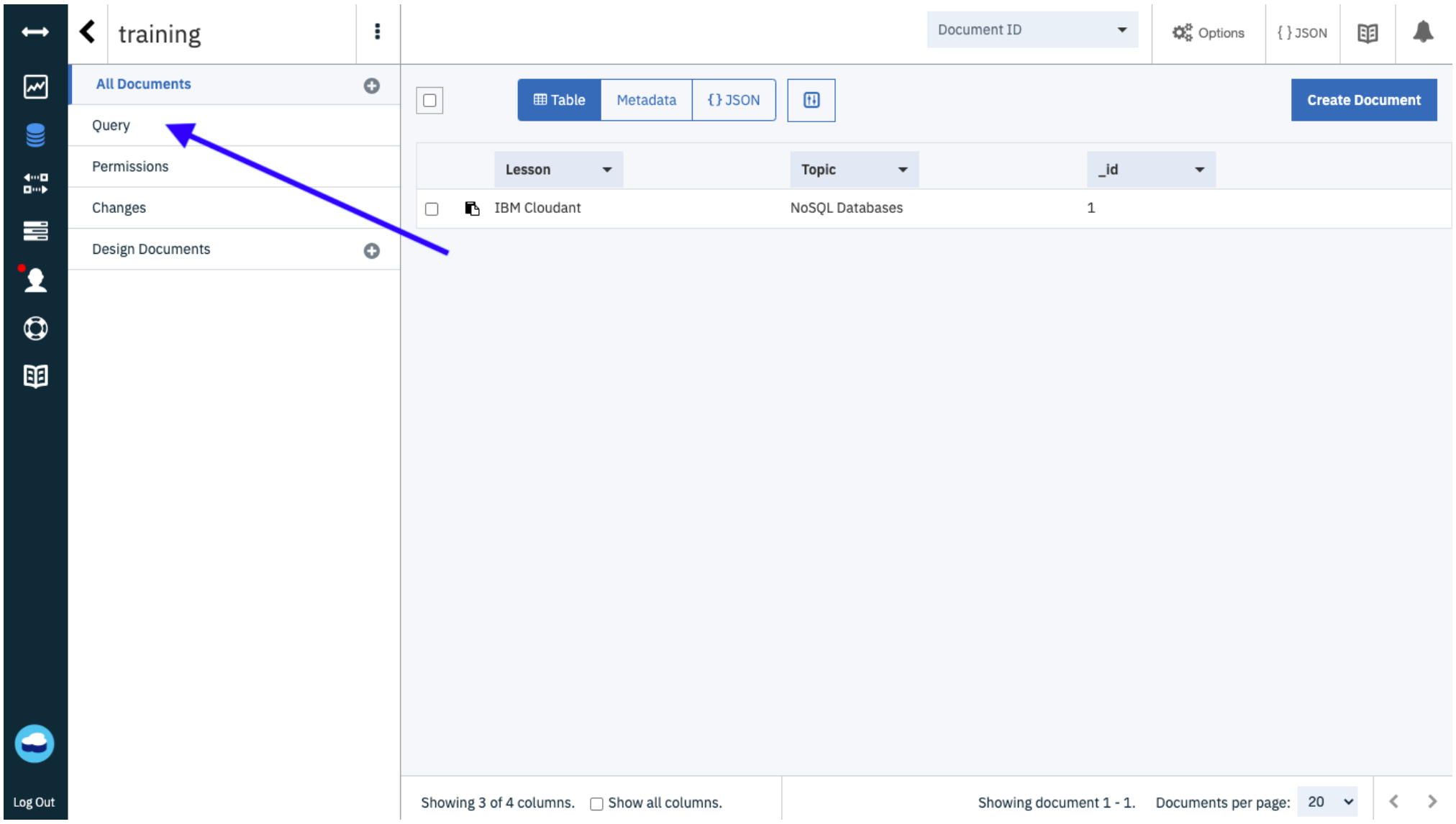
Step 4: Select `Table` view to view the documents in a tabular form.

You should now see documents like this.



Exercise 4 - Perform a simple query

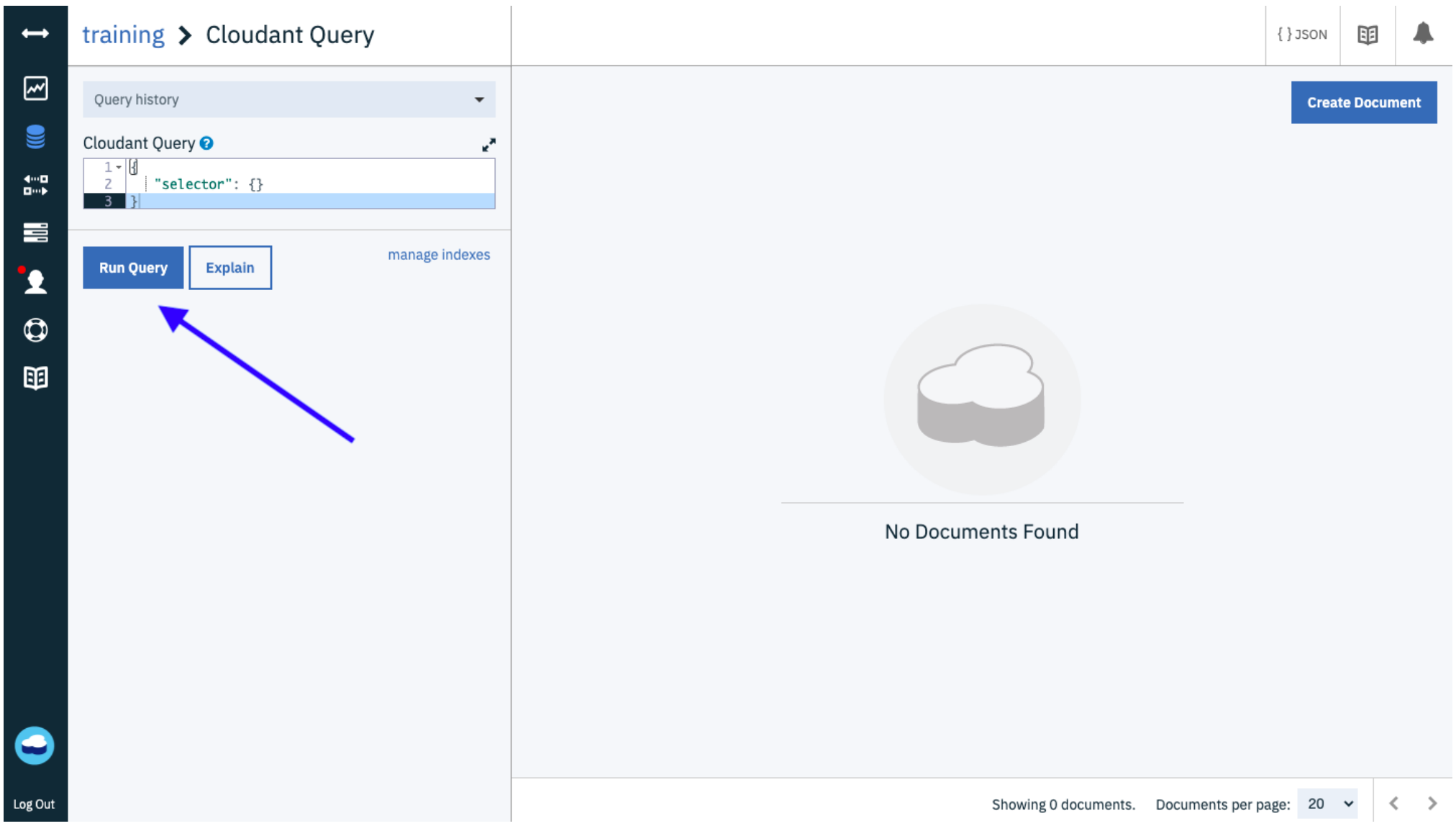
Step 1: Click on `Query`.



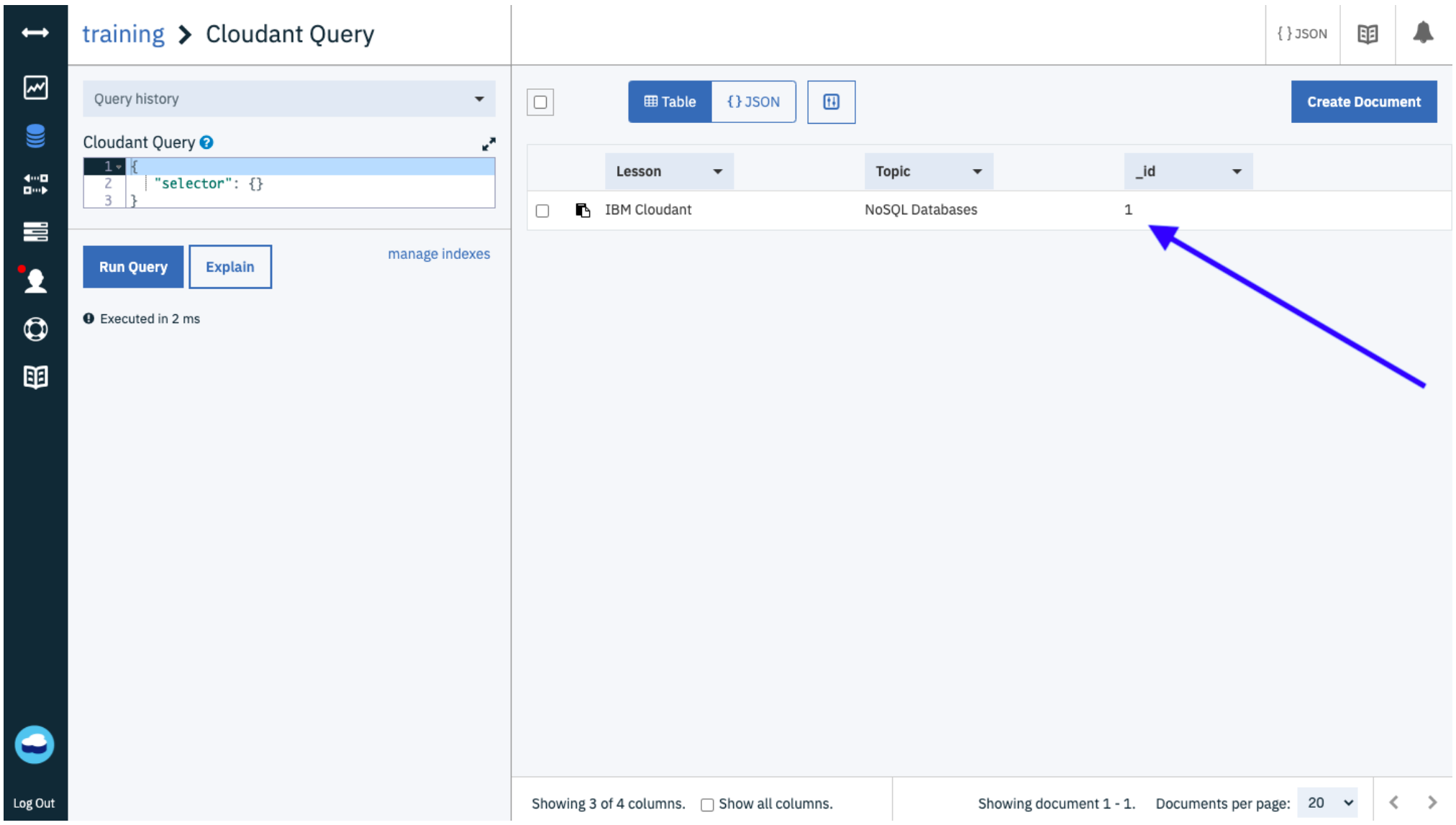
Step 2: Copy the below given query and replace the default sample query given on the page.

```
{
   "selector": {}
}
```

Step 3: Click on `Run Query`



You will see the query results.



Cloudant queries are also in the JSON format. What we have queried here is the equivalent of select * from training.

Exercise 5 - Replicate a database

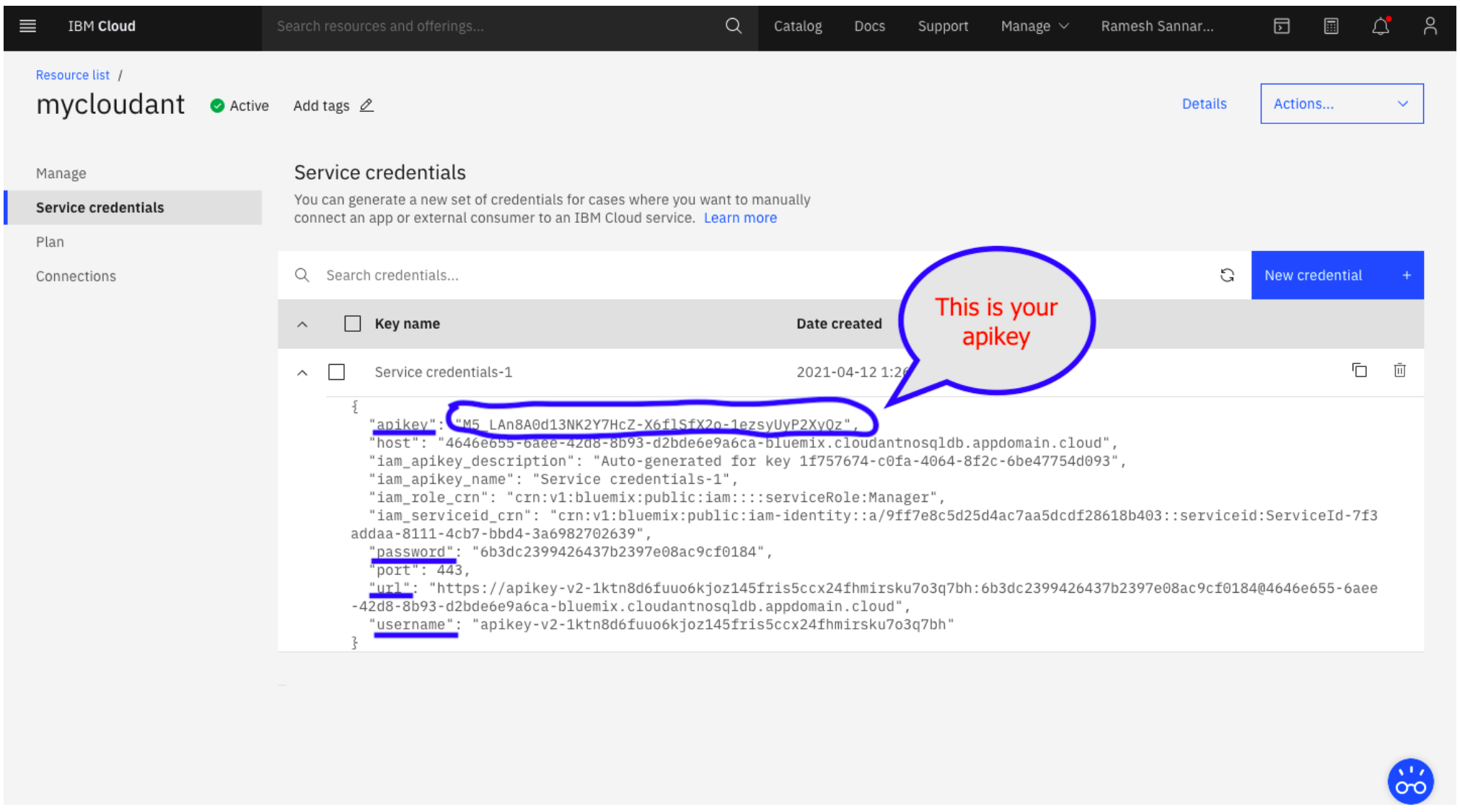
Step 1: Api Key is needed for setting up replication. Fetch the apikey from Cloudant Service Credentials.

▼ Click here for Hint
Step 1: Go to http://cloud.ibm.com/resources.

Step 2: Under Services click on your instance of Cloudant.

Step 3: On the Cloudant instance page, click on `Service Credentials`.

Step 4: Click on the chevron of your Service Credentials. You should see your Service Credentials.

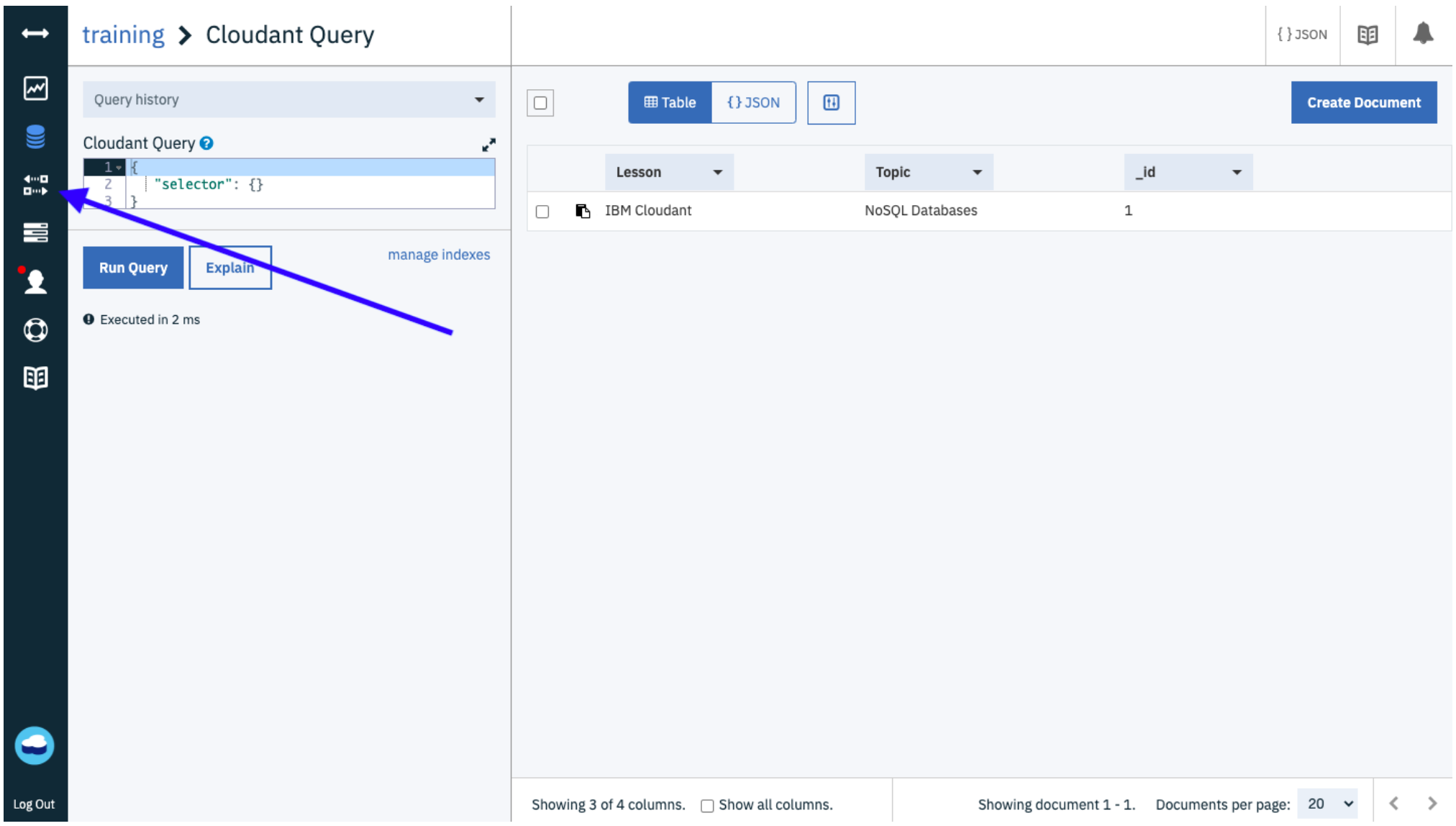


Step 5: Copy the apikey without the double quotes on either side.

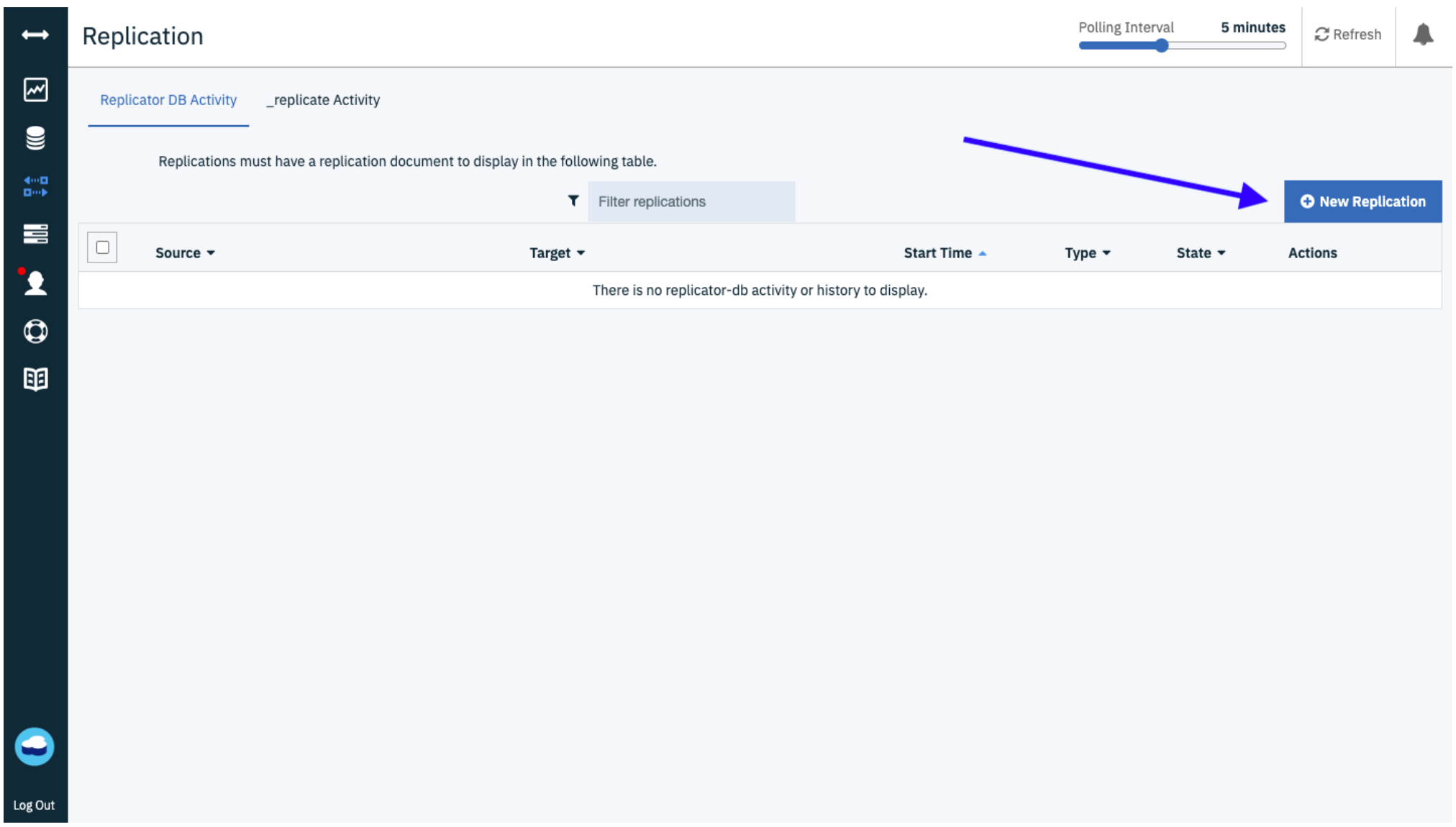
Example : My expired api key is M5_LAn8A0d13NK2Y7HcZ-X6flSfX2o-1ezsyUyP2XyQz

End of hint.

Step 2: Click on the `Replication` icon.



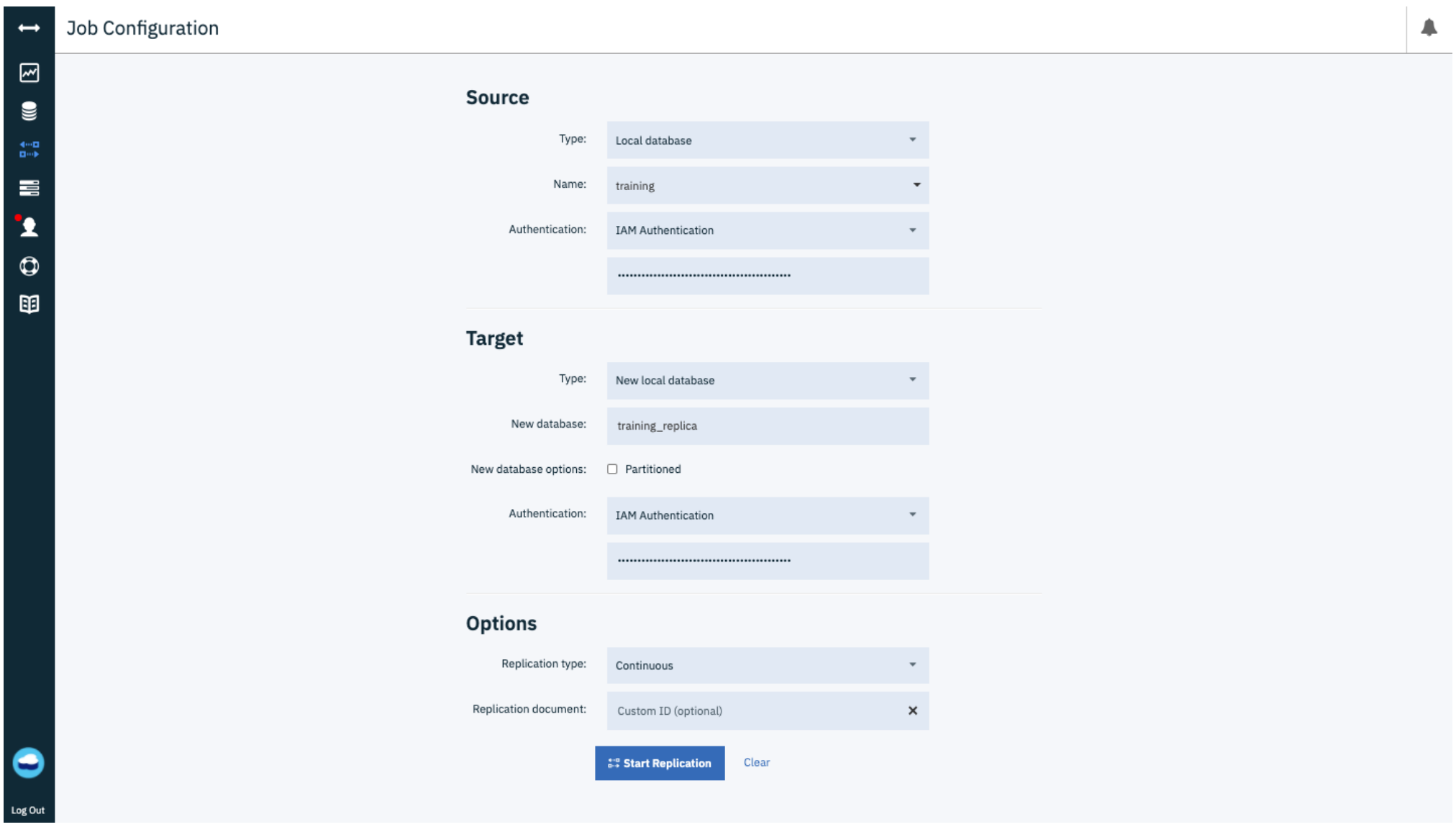
Step 3: You will land on the Replication dashboard. Click on `New Replication`.



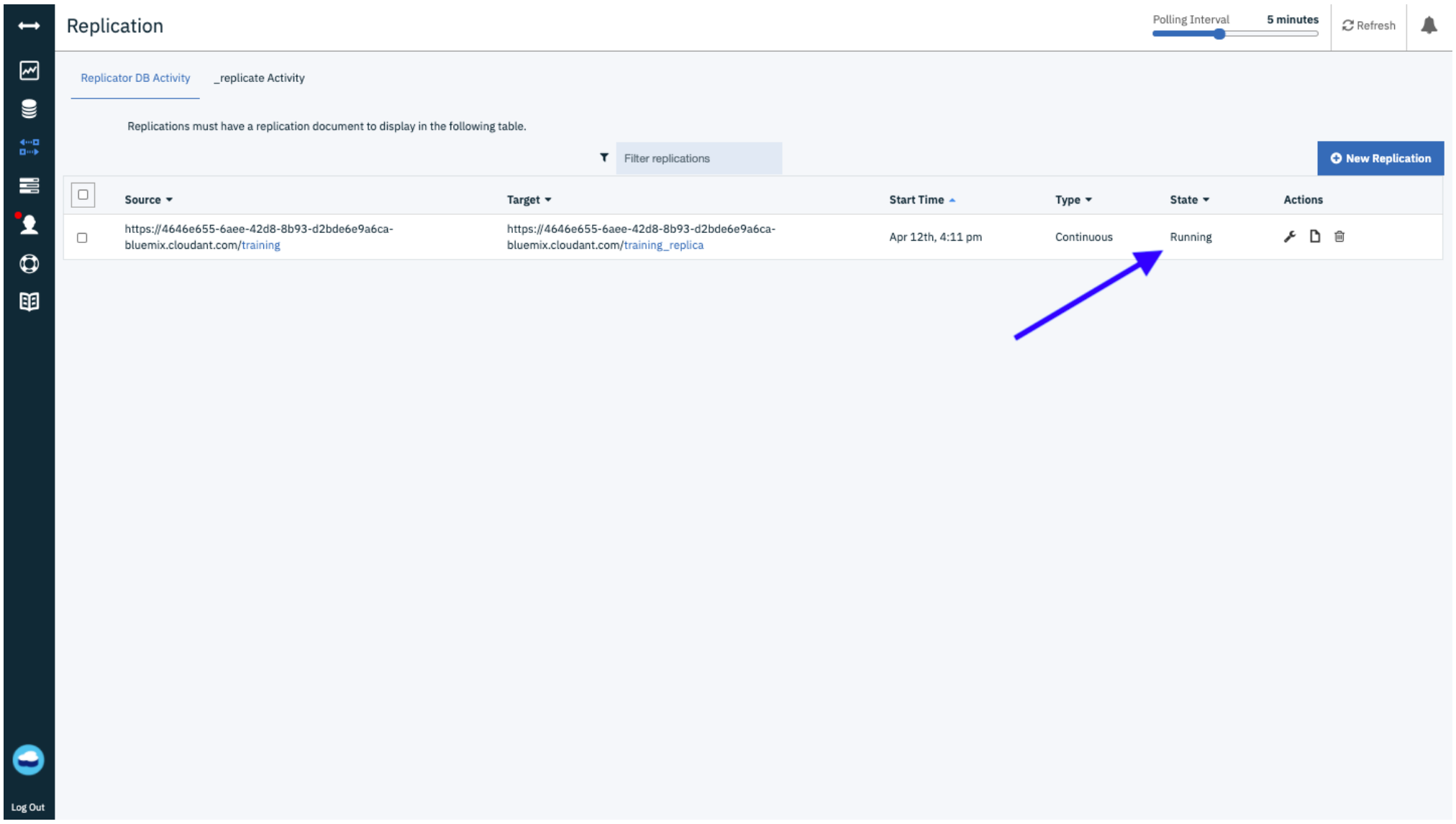
Step 4: On the Job Configuration page, select the following details.

```
Under Source
  Select Type = Local database
  Select Name = training
  Select Authentication = "IAM Authentication"
  Paste the api key you copied earlier in the IAM API Key textbox.

Under Target
  Select Type = New local database
  Select Name = training_replica
  Select Authentication = "IAM Authentication"
  Paste the api key you copied earlier in the IAM API Key textbox.

Under Options:
  Select Type = Continuous
```

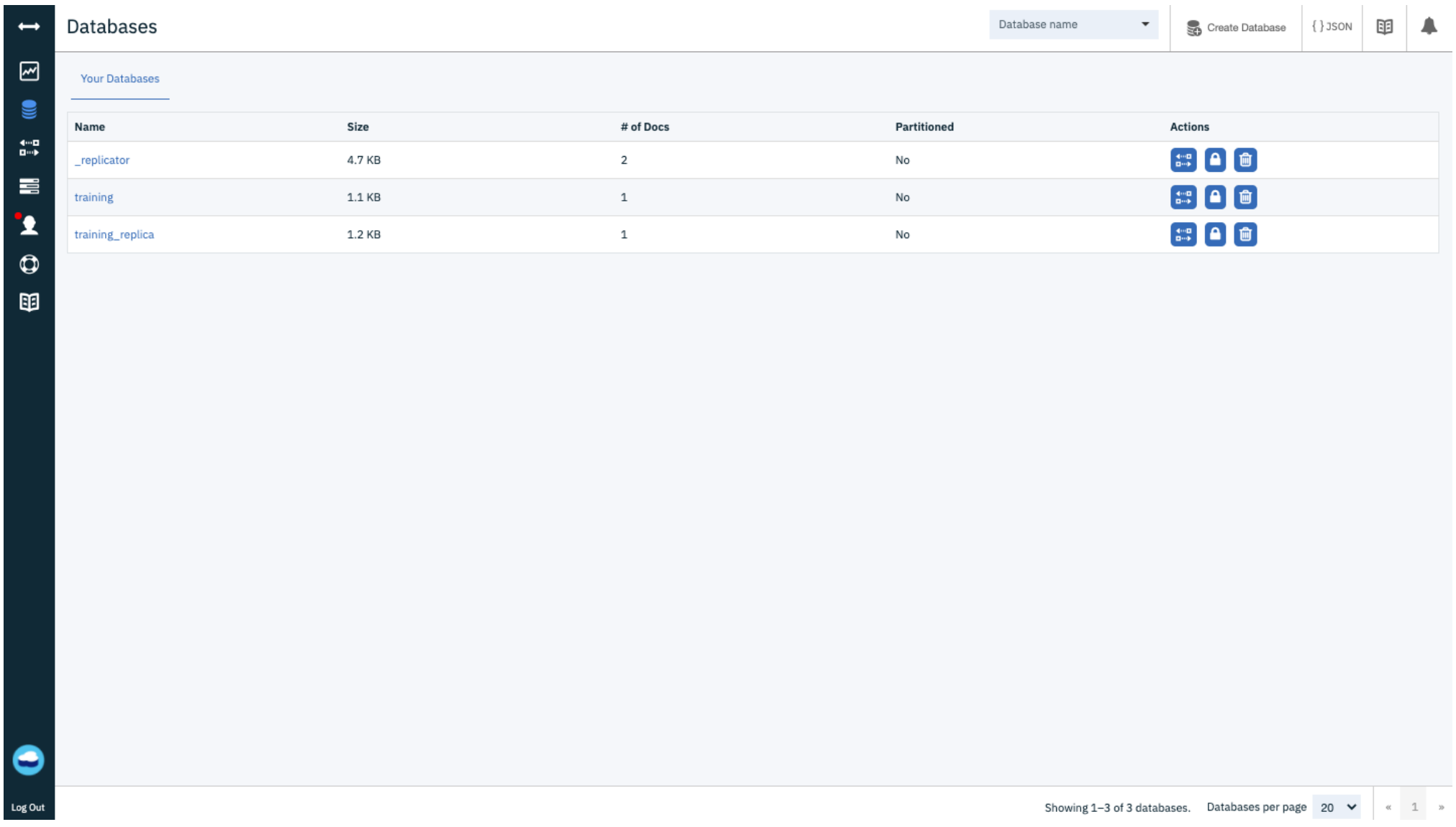
Step 5: Click on `Start Replication`.



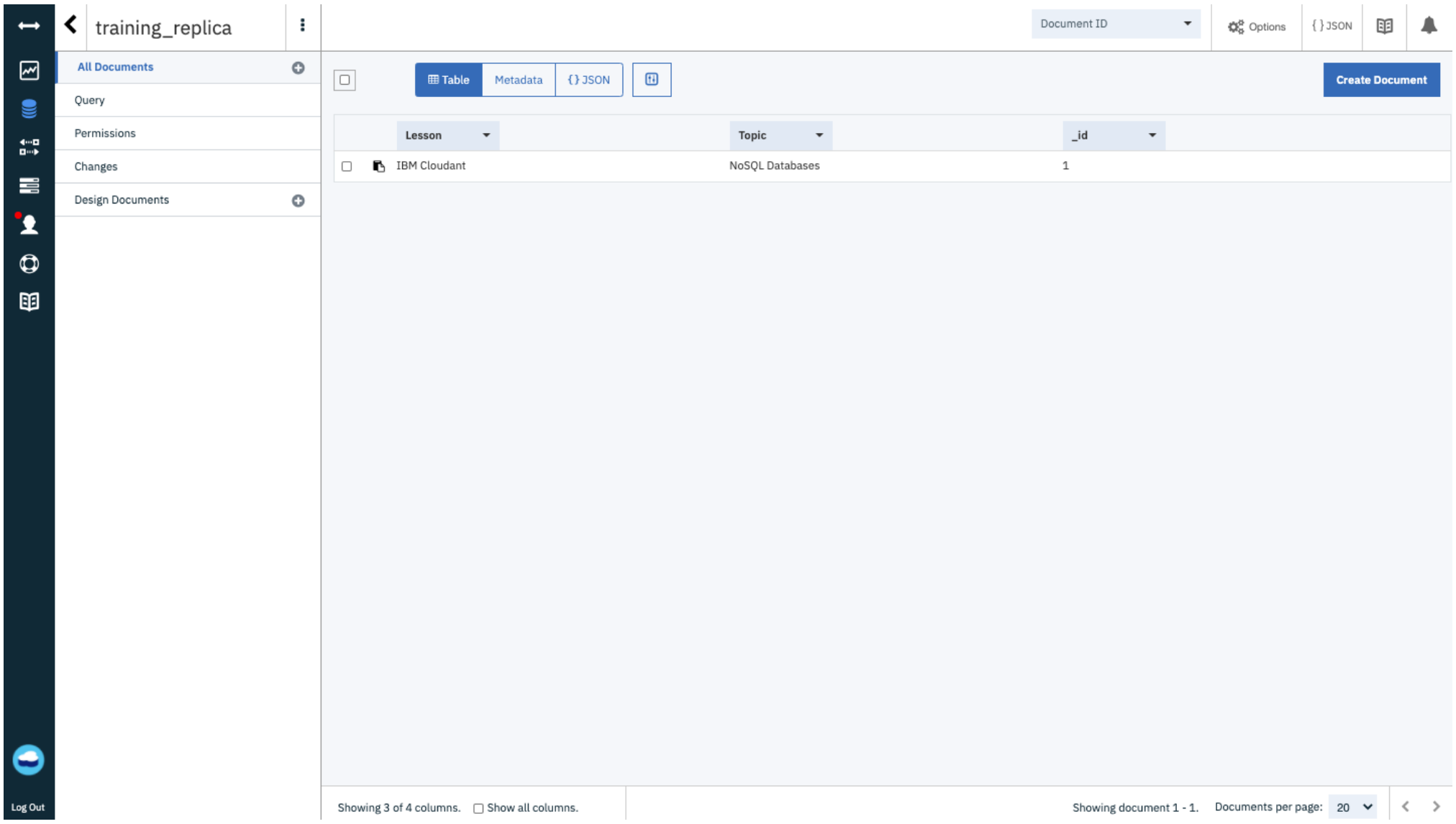
Step 6: A replication status of `running` indicates that the replication is working.



Step 7: Click on the `Database` icon. You should see a new database named **training_replica**.



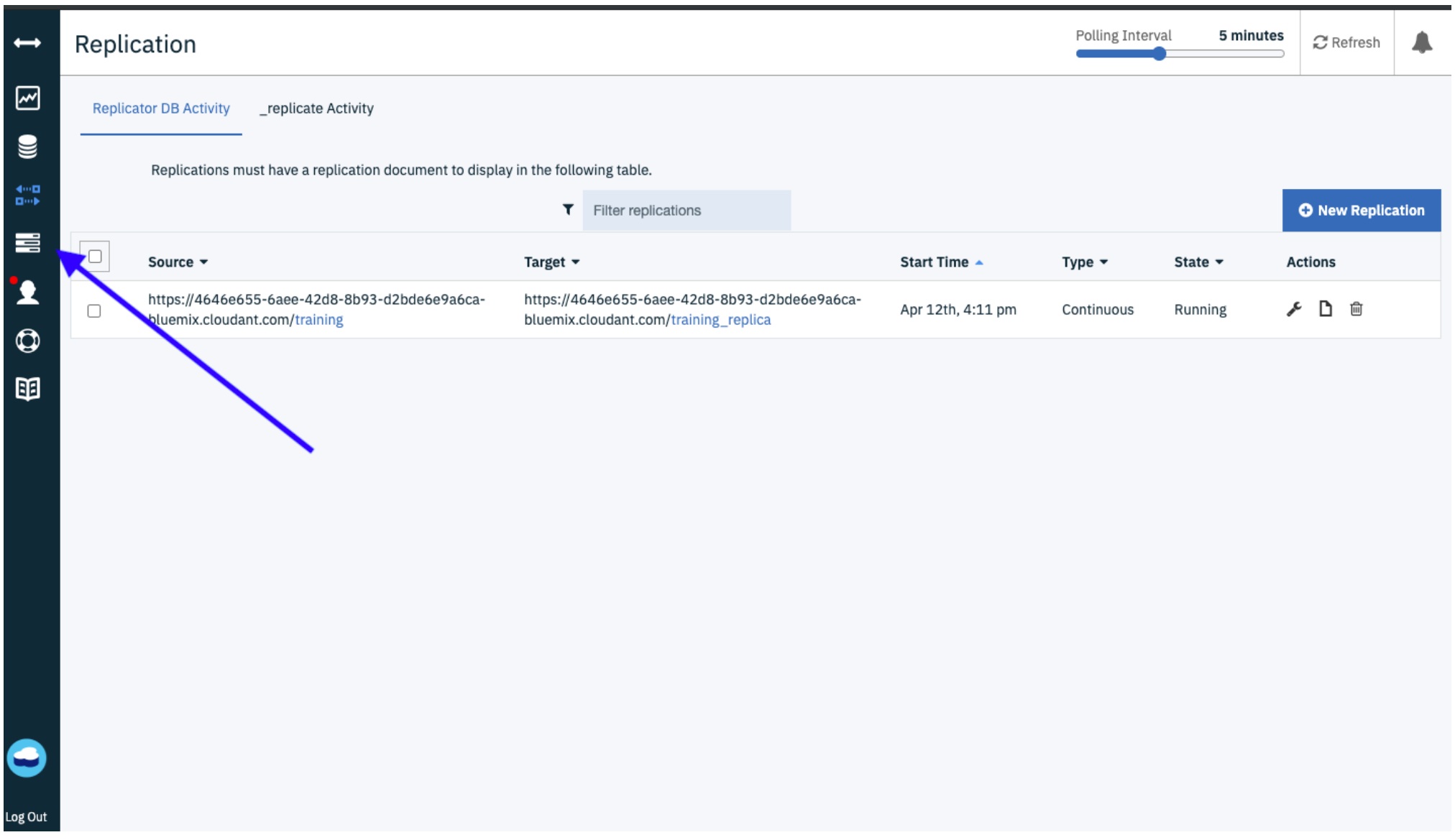
Step 8: Click on the **training_replica** database. You should see the document you have inserted in the training database.



You have successfully setup continuous replication between the training and training_replica databases. Whatever changes you make on the training database will be replicated to the training_replica database.

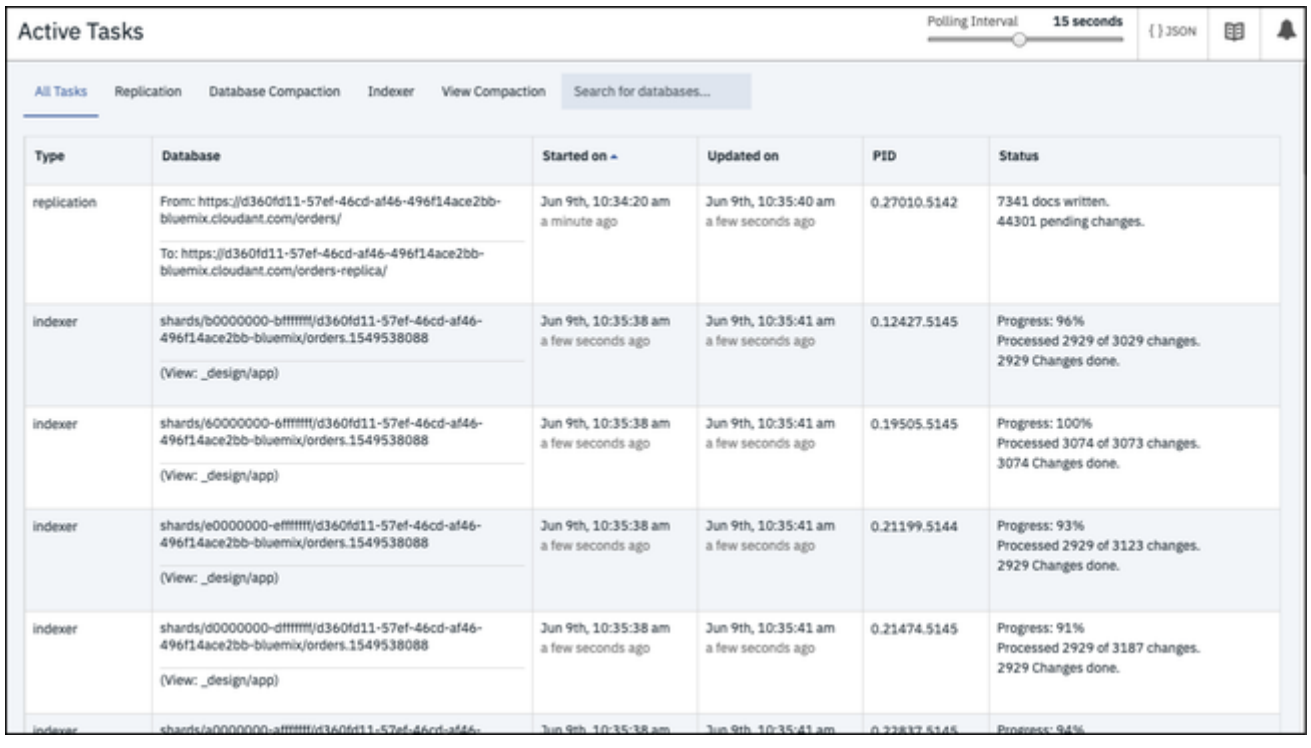
Exercise 6 - Monitor active tasks

Step 1: Click on the `Active Tasks` icon.



The Active tasks page displays a list of all running tasks. You can use this to find out what is happening on your Cloudant instance. You can see a list of active tasks, which includes compaction, replication, and indexing.

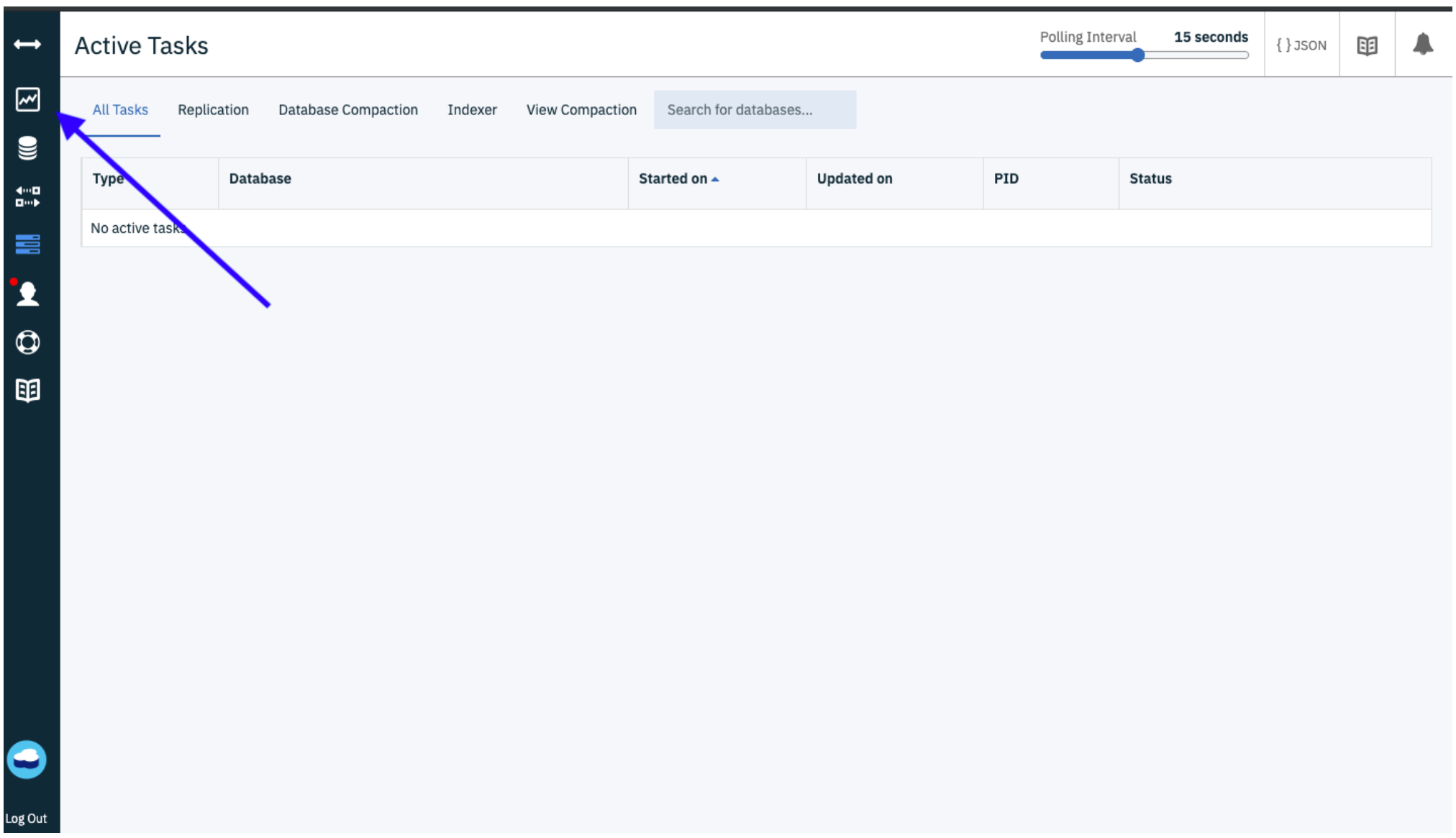
Here is a sample Active Tasks view.



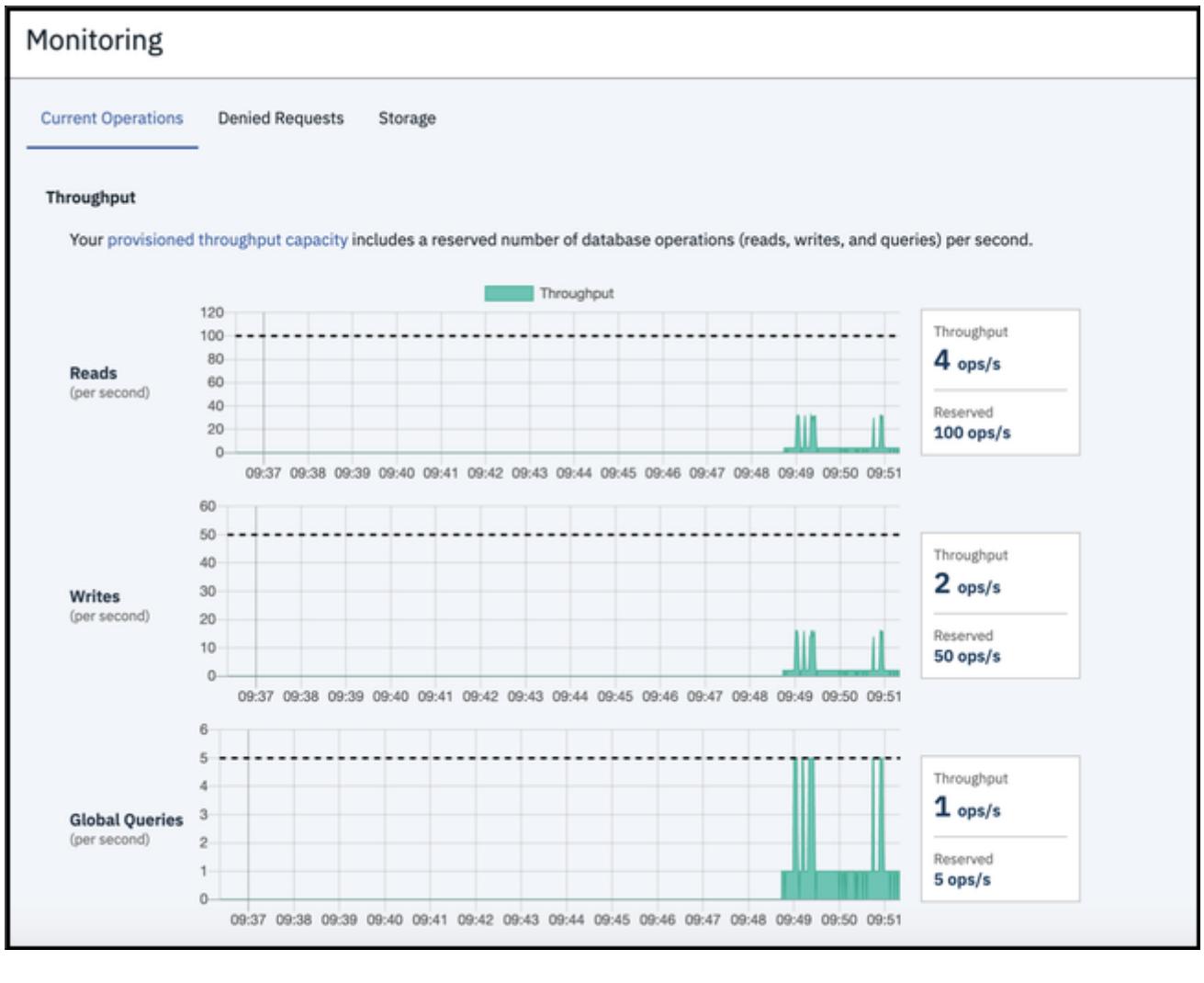
Exercise 7 - Monitor your instance

Monitor your usage in realtime with a graph that shows your throughput by reads, writes, and global queries. You can see your current operations, denied requests, and storage usage.

Step 1: Click on the `Monitoring` icon.



Here is a sample monitoring view for Current Operations.



Note: Your monitoring output could be different from the screen shot above, mostly 0 ops/s as there may not be any load on your instance.

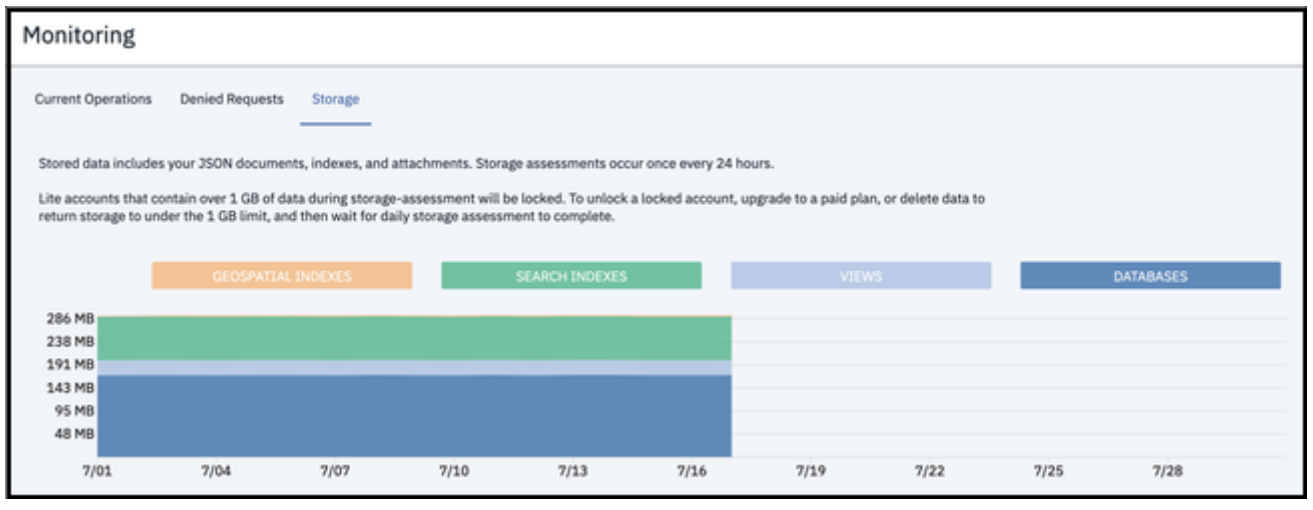
Step 2: Click on the `Denied Requests` tab.

Here is a sample monitoring view for Denied Requests. Whenever we perform more reads or writes than our plan allows, those requests will be denied and shown here.

Note: Your monitoring output could be different from the screen shot above, depending upon your usage.

Step 3: Click on the `Storage` tab.

Here is a sample Storage view. It shows how much storage is used for data, indexes and views.



Note: Your monitoring output could be different from the screen shot above, depending upon your usage.

Practice exercises

1. Problem:

> *Create a database named **test**.*

▼ Click here for Hint

> On the Cloudant dashboard, click on the Databases icon, click on Add Database.

2. Problem:

> *Insert a sample doccument.*

▼ Click here for Hint

> Remember the _id key is mandatory.

Click on **test** on the databases screen. Click on `Create Document`. Replace the default text with the following JSON and click `Create Document`.

```
{
  "_id": "1",
  "Topic" : "NoSQL Databases",
  "Lesson" : "MongoDB"
}
```

3. Problem:

> *Setup continuous replication between test and test_replica databases.*

▼ Click here for Hint

> Keep you api key handy. Go to the replication page. Click on New Replication. Select these details.

```
Under Source
  Select Type = Local Database
  Select Name = test
  Select Authentiation = "IAM Authentication"
  Paste the api key you copied earlier in the IAM API Key  textbox.

Under Target
  Select Type = Local Database
  Select Name = test_replica
  Select Authentiation = "IAM Authentication"
  Paste the api key you copied earlier in the IAM API Key  textbox.

Under Options:
  Select Type = Continuous
```

4. Problem:

> *Find out if any denied requests were denied.*

▼ Click here for Hint

> Go to the monitoring page. Click on denied requests.

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Change Log

Date (YYYY-MM-DD)	Version	Changed By	Change Description
2021-10-25	0.4	Kathy An	Updated lab instructions
2021-04-28	0.3	Steve Ryan	Changed IBM cloud links to markdown format
2021-04-13	0.2	Steve Ryan	Review pass
2021-04-11	0.1	Ramesh Sannareddy	Created initial version of the lab

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