



**IBM Developer
SKILLS NETWORK**

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 authenticate. This may happen when you step out or leave your Cloudant session unattended.

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**.

IBM Cloud

Search resources and offerings...

Q

Catalog

Docs

Support

Manage

Ramesh Sannar...

Resource list / mycloudant

Active

Add tags

Details

Actions...

Manage

Service credentials

Plan

Connections

Overview

Dashboard

Capacity

Docs

Launch Dashboard

Deployment details

CRN

crn:v1:bluemix:public:cloudantnosqldb:eu-gb:a/9ff7e8c5d25d4ac7aa5dcdf28618b403:f2f160dd-10bb-4161-93a9-f3d3db5a8db9::

Location

London

External Endpoint

<https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com>

External Endpoint (preferred)

<https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudantnosqldb.appdomain.cloud>

Authentication methods

[IBM Cloud IAM](#) and [Cloudant credentials](#)

Activity Tracker event types

Management

Save

Disk encryption

Yes. Automatically generated disk encryption key.

Capacity details

The Cloudant dashboard looks like this.

Databases

Database name

Create Database

{ } JSON

Your Databases

Name	Size	# of Docs	Partitioned	Actions
------	------	-----------	-------------	---------

Showing 1–0 of 0 databases.

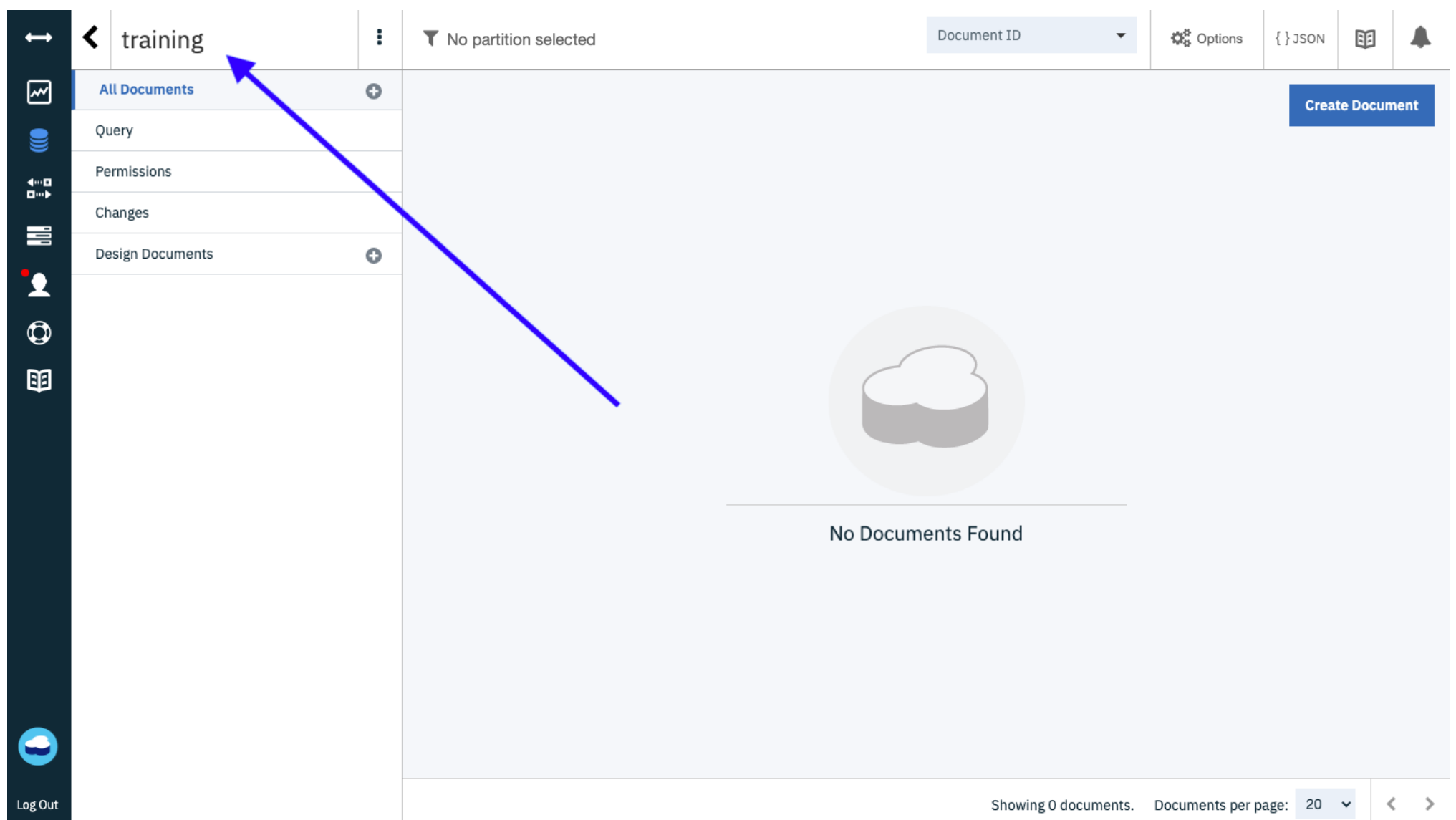
Databases per page

20

« 1 »

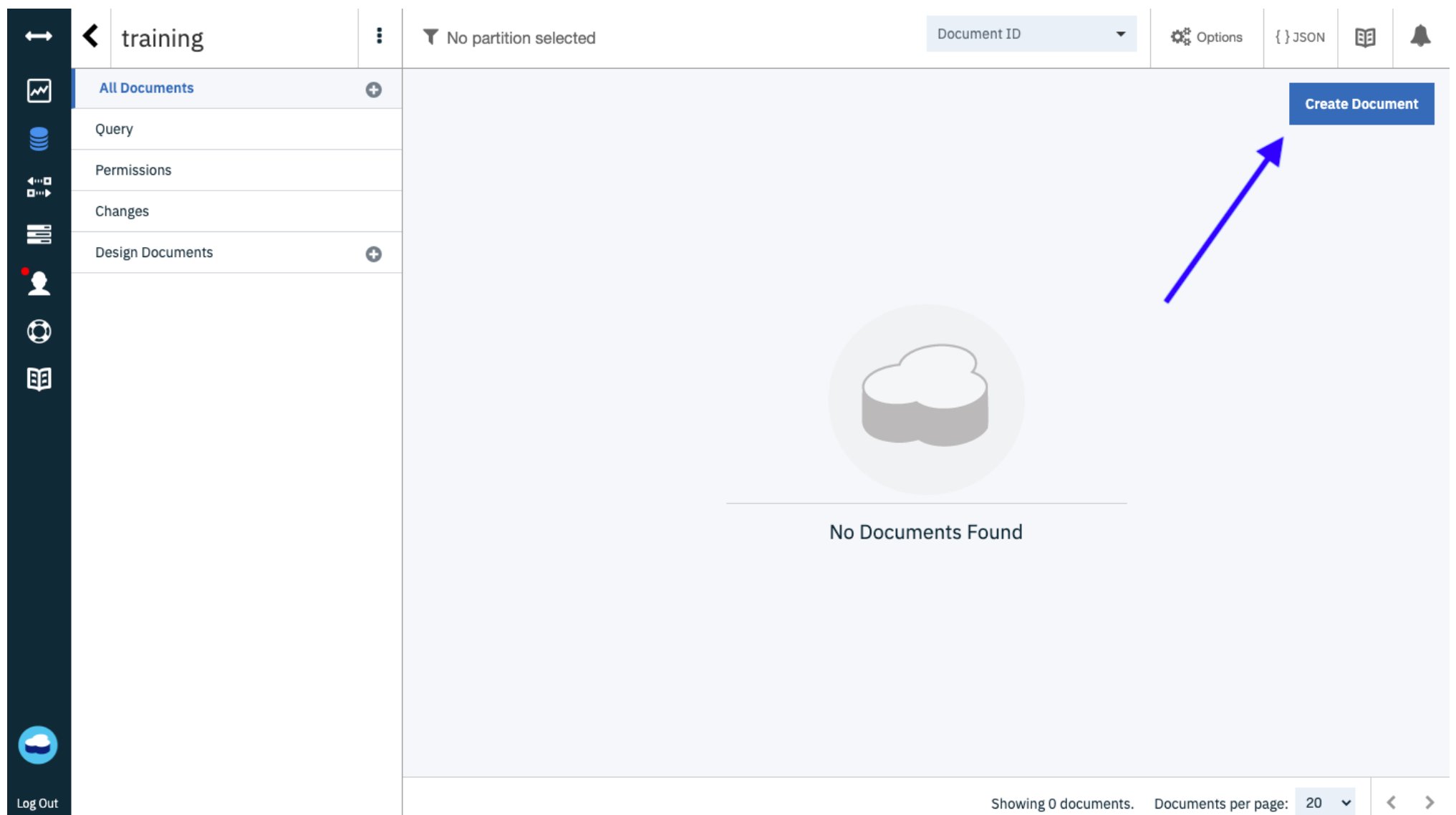
Exercise 2 - Create a database

Step 1: Click on **Create Database**.



Exercise 3 - Perform a simple insert

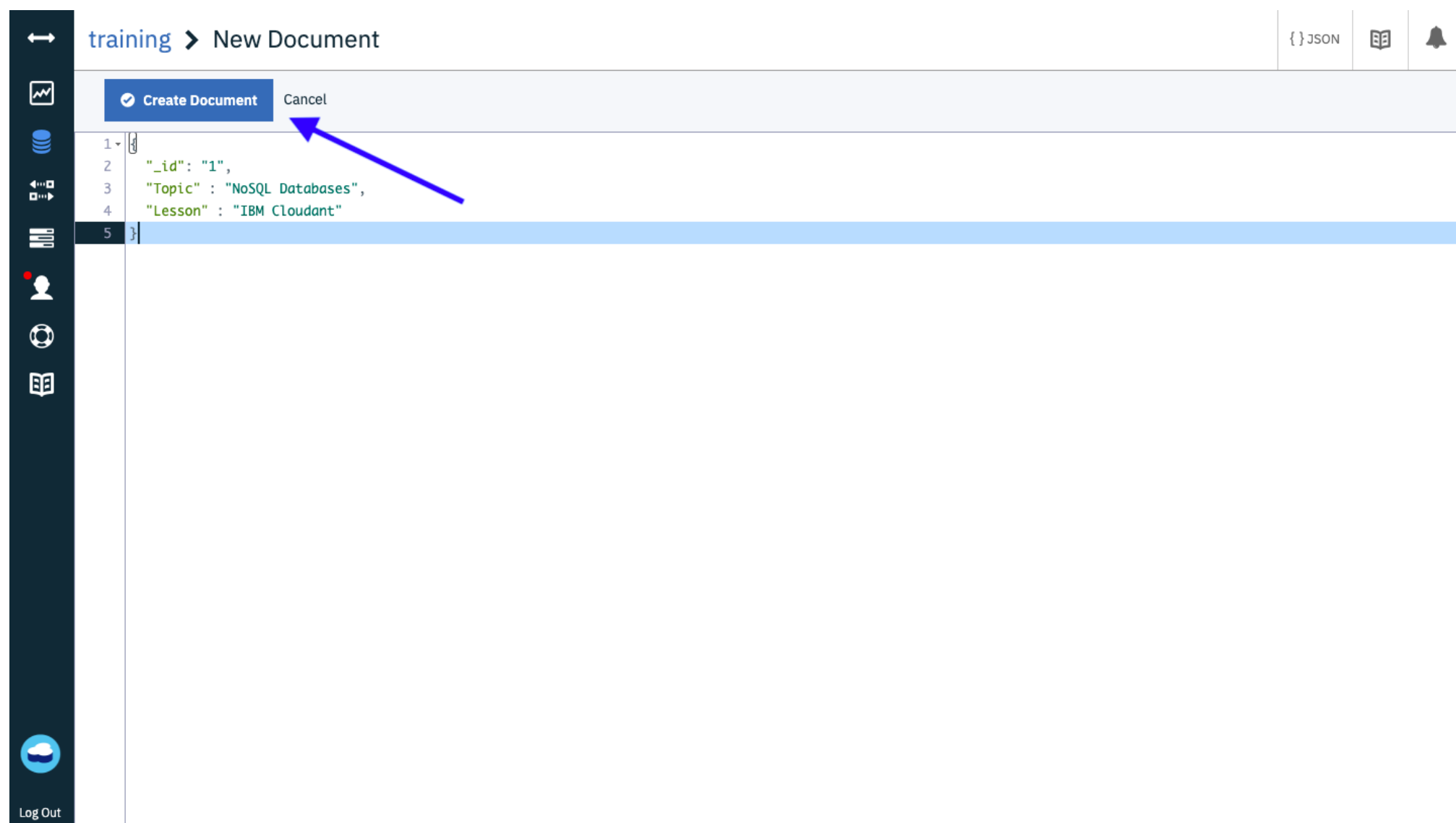
Step 1: Click on **Create Document**.



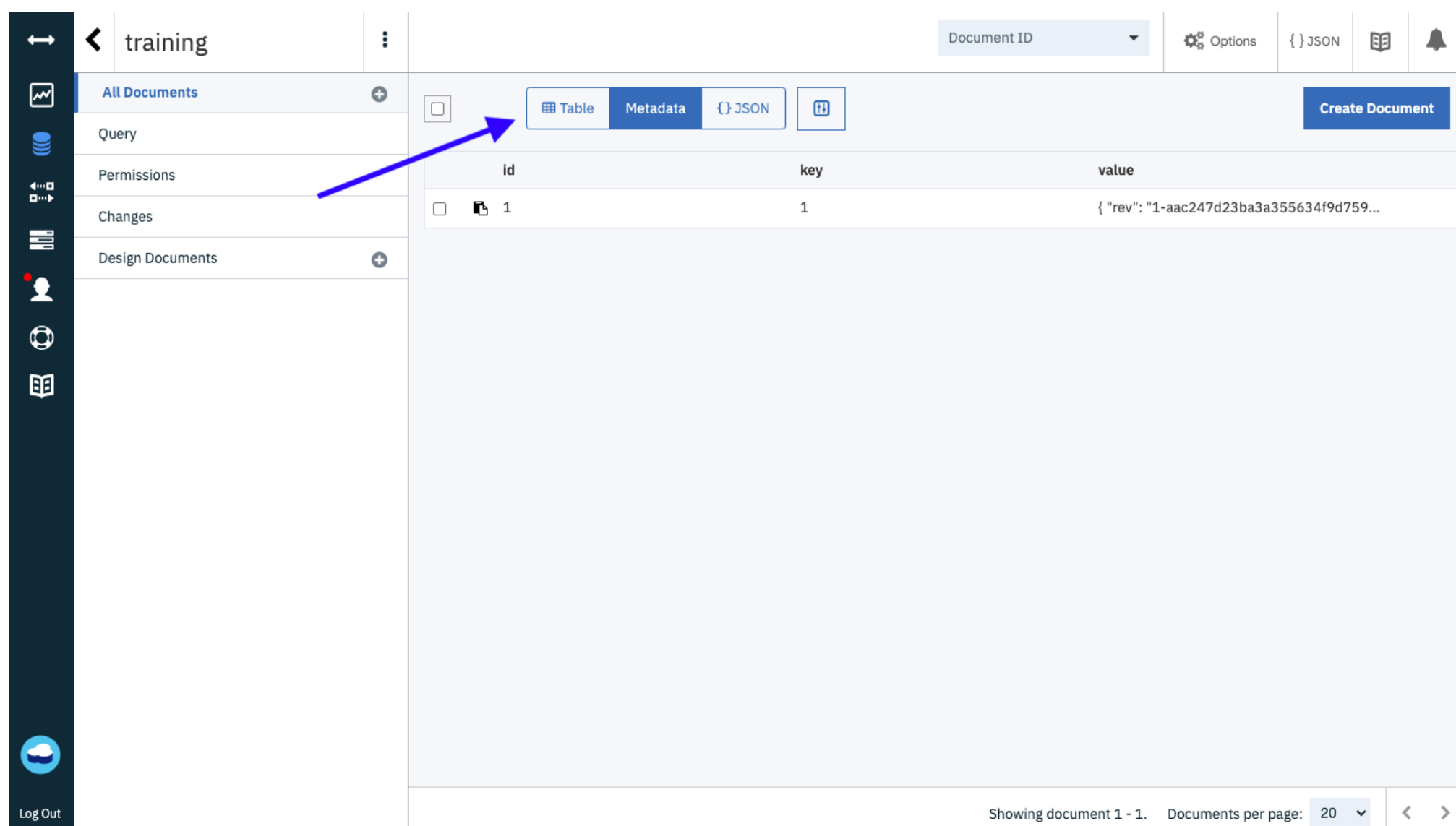
Step 2: Copy the below given JSON document and replace the default sample document given on the page.

```
{
  "_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.

< training
Document ID ▾
 Options
{ } JSON

All Documents +

Query

Permissions

Changes

Design Documents +

☐

Lesson ▾	Topic ▾	_id ▾
<input type="checkbox"/> IBM Cloudant	NoSQL Databases	1

Create Document

Showing 3 of 4 columns. ☐ Show all columns.
Showing document 1 - 1. Documents per page: 20 ▾
< >

Exercise 4 - Perform a simple query

Step 1: Click on **Query**.

training

All Documents

Query

Permissions

Changes

Design Documents

Document ID

Options

{ } JSON

Table

Metadata

{ } JSON

Create Document

	Lesson	Topic	_id
<input type="checkbox"/>	IBM Cloudant	NoSQL Databases	1

Showing 3 of 4 columns. ☐ Show all columns.

Showing document 1 - 1. Documents per page: 20

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

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

Step 3: Click on **Run Query**

training > Cloudant Query

Query history

Cloudant Query ?

1 {

2 "selector": {}

3 }

Run Query

Explain

manage indexes

Log Out

{ } JSON

Create Document

No Documents Found

Showing 0 documents. Documents per page: 20 < >

You will see the query results.

training > Cloudant Query

Query history

Cloudant Query ?

1 {

2 "selector": {}

3 }

Run Query

Explain

manage indexes

Executed in 2 ms

Log Out

Table

{ } JSON

Create Document

Lesson Topic _id

IBM CloudantNoSQL Databases1

Showing 3 of 4 columns. ☐ Show all columns. Showing document 1 - 1. Documents per page: 20 < >

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.

IBM Cloud

Search resources and offerings...

Catalog

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Ramesh Sannar...

Resource list / mycloudant

Active

Add tags

Details

Actions...

Manage

Service credentials

Plan

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...

New credential

Key name	Date created
Service credentials-1	2021-04-12 1:26

```
{  "apikey": "M5_LAn8A0d13NK2Y7HcZ-X6f1SfX2o-1ezsyUyP2XyQz",  "host": "4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudantnosqldb.appdomain.cloud",  "iam_apikey_description": "Auto-generated for key 1f757674-c0fa-4064-8f2c-6be47754d093",  "iam_apikey_name": "Service credentials-1",  "iam_role_crn": "crn:v1:bluemix:public:iam:::serviceRole:Manager",  "iam_serviceid_crn": "crn:v1:bluemix:public:iam-identity::a/9ff7e8c5d25d4ac7aa5dcdf28618b403::serviceid:ServiceId-7f3addaa-8111-4cb7-bbd4-3a6982702639",  "password": "6b3dc2399426437b2397e08ac9cf0184",  "port": 443,  "url": "https://apikey-v2-1ktn8d6fuuo6kjoz145fris5ccx24fhmirsku7o3q7bh:6b3dc2399426437b2397e08ac9cf0184@4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudantnosqldb.appdomain.cloud",  "username": "apikey-v2-1ktn8d6fuuo6kjoz145fris5ccx24fhmirsku7o3q7bh"}
```

This is your apikey

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

Example : My expired api key is M5_LAn8A0d13NK2Y7HcZ-X6f1SfX2o-1ezsyUyP2XyQz

End of hint.

Step 2: Click on the Replication icon.

training > Cloudant Query

Query history

Cloudant Query

1- {

2- | "selector": {}

3- }

Run Query

Explain

Executed in 2 ms

manage indexes

Table

JSON

Create Document

Lesson	Topic	_Id
IBM Cloudant	NoSQL Databases	1

Showing 3 of 4 columns. Show all columns.

Showing document 1 - 1. Documents per page: 20

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

↔

Replication

Replicator DB Activity

_replicate Activity

Replications must have a replication document to display in the following table.

Filter replications

Source ▾

Target ▾

Start Time ▲

Type ▾

State ▾

Actions

There is no replicator-db activity or history to display.

Polling Interval

5 minutes

Refresh

Log Out

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**.

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Log Out

Job Configuration

Source

Type:Local database

Name:training

Authentication:IAM Authentication

.....

Target

Type:New local database

New database:training_replica

New database options:☐ Partitioned

Authentication:IAM Authentication

.....

Options

Replication type:Continuous

Replication document:Custom ID (optional)

✕

⚙️ Start Replication

Clear

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

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Log Out

Replication

Replicator DB Activity

_replicate Activity

Replications must have a replication document to display in the following table.

Filter replications

New Replication

	Source	Target	Start Time	Type	State	Actions
<input type="checkbox"/>	https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com/training	https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com/training_replica	Apr 12th, 4:11 pm	Continuous	Running	🔧 📄 🗑️

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

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Databases

Database name ▾

🗄️ Create Database

{ } JSON

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🔔

Your Databases

Name	Size	# of Docs	Partitioned	Actions
_replicator	4.7 KB	2	No	<div>🔄</div> <div>🔒</div> <div>🗑️</div>
training	1.1 KB	1	No	<div>🔄</div> <div>🔒</div> <div>🗑️</div>
training_replica	1.2 KB	1	No	<div>🔄</div> <div>🔒</div> <div>🗑️</div>

Showing 1–3 of 3 databases.

Databases per page 20 ▾

«

1

»

Log Out

🌐

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

<
training_replica
⋮

- All Documents +
- Query
- Permissions
- Changes
- Design Documents +

☐

Lesson	Topic	_id
<input type="checkbox"/> IBM Cloudant	NoSQL Databases	1

Document ID

⚙️ Options

{ } JSON

📖

🔔

[Create Document](#)

Showing 3 of 4 columns. ☐ Show all columns.

Showing document 1 - 1. Documents per page: 20

<
>

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.

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Log Out

Active Tasks

Polling Interval15 seconds

{ } JSON

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All Tasks

Replication

Database Compaction

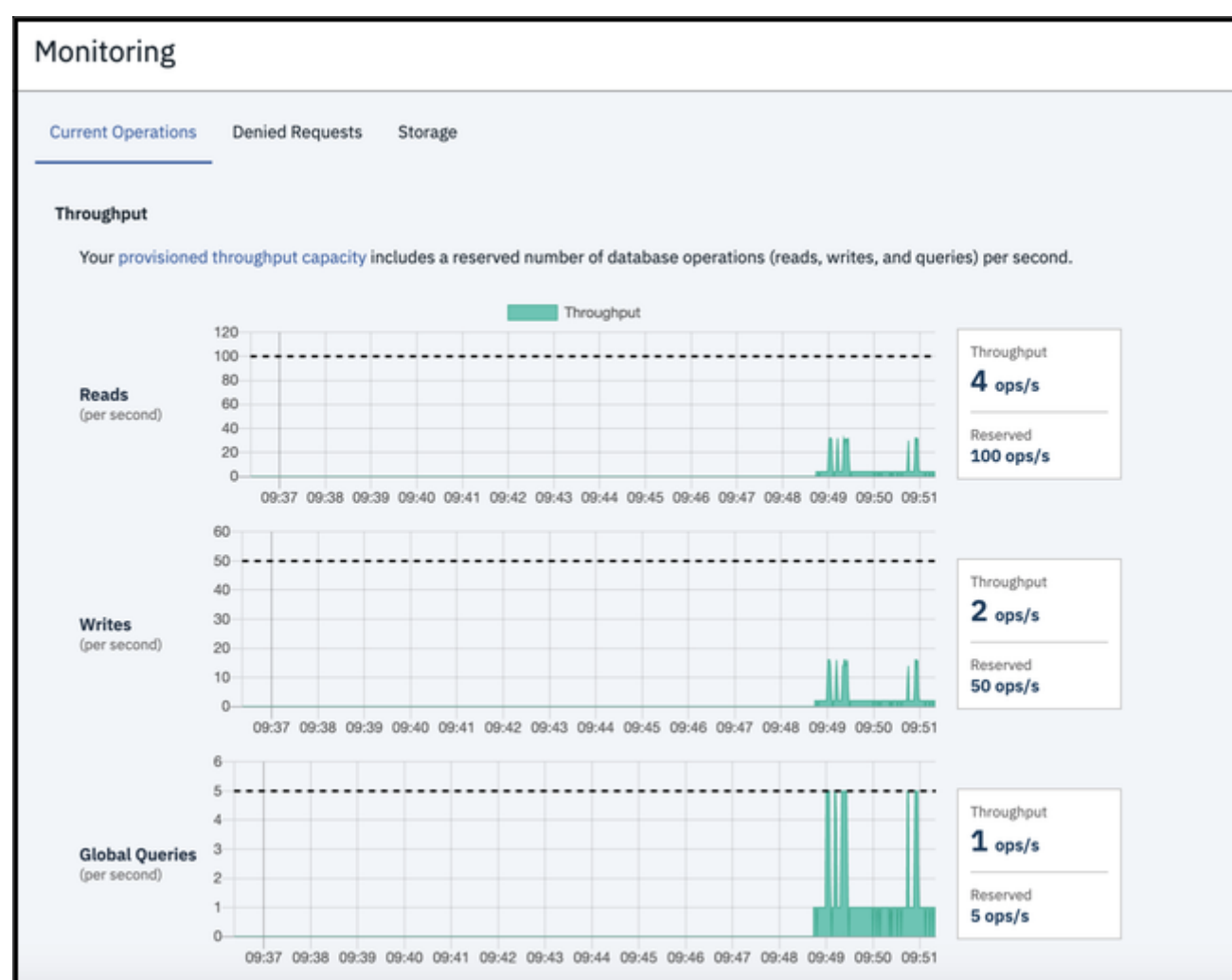
Indexer

View Compaction

Search for databases...

Type	Database	Started on ▲	Updated on	PID	Status
No active tasks					

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.

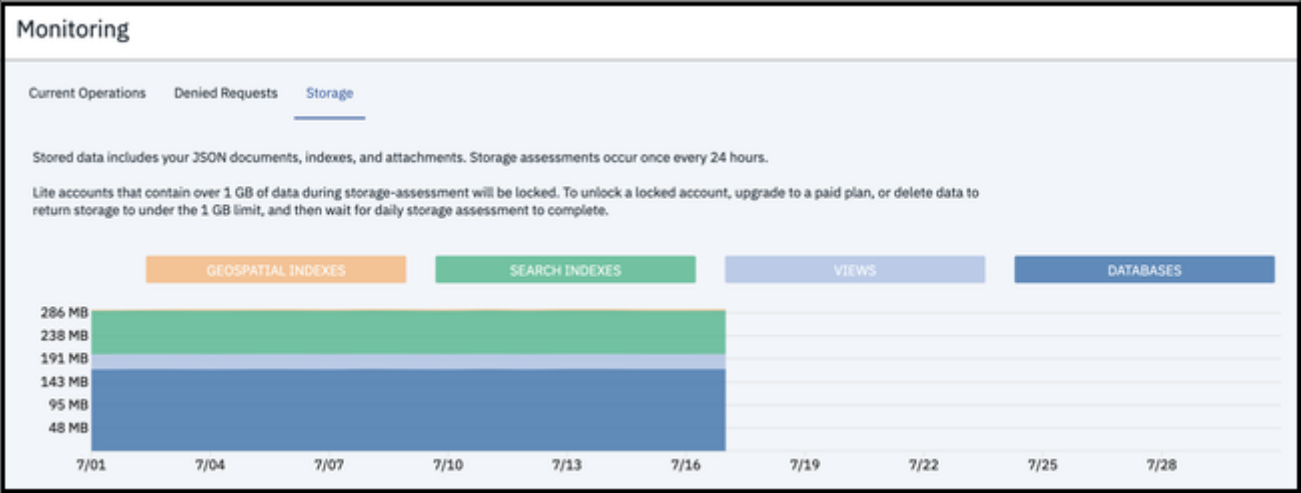
Here is a sample monitoring view for Denied Requests. Whenever we perform more reads or writes than our plan allows, those requests will be denied and shown here.



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

2. Problem:

Insert a sample document.

► Click here for Hint

3. Problem:

Setup continuous replication between test and test_replica databases.

► Click here for Hint

4. Problem:

Find out if any denied requests were denied.

▼ Click here for Hint

Go to the monitoring page. Click on denied requests.

Authors

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Other Contributors

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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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