

Hands-on Lab: Dashboards in Cloudant



Skills
Network

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...

Resource list /

mycloudant

Active

Add tags

Manage

Service credentials

Plan

Connections

Overview

Dashboard

Capacity

Deployment details

CRN

crn:v1:bluemix:public:cl
db5a8db9::

Location

London

External Endpoint

[https://4646e655-6aee](#)

External Endpoint (preferred)

[https://4646e655-6aee](#)

Authentication methods

[IBM Cloud IAM](#) and [C](#)

Activity Tracker event types

Management

Disk encryption

Yes. Automatically gene

Capacity details

The Cloudant dashboard looks like this.

Log Out

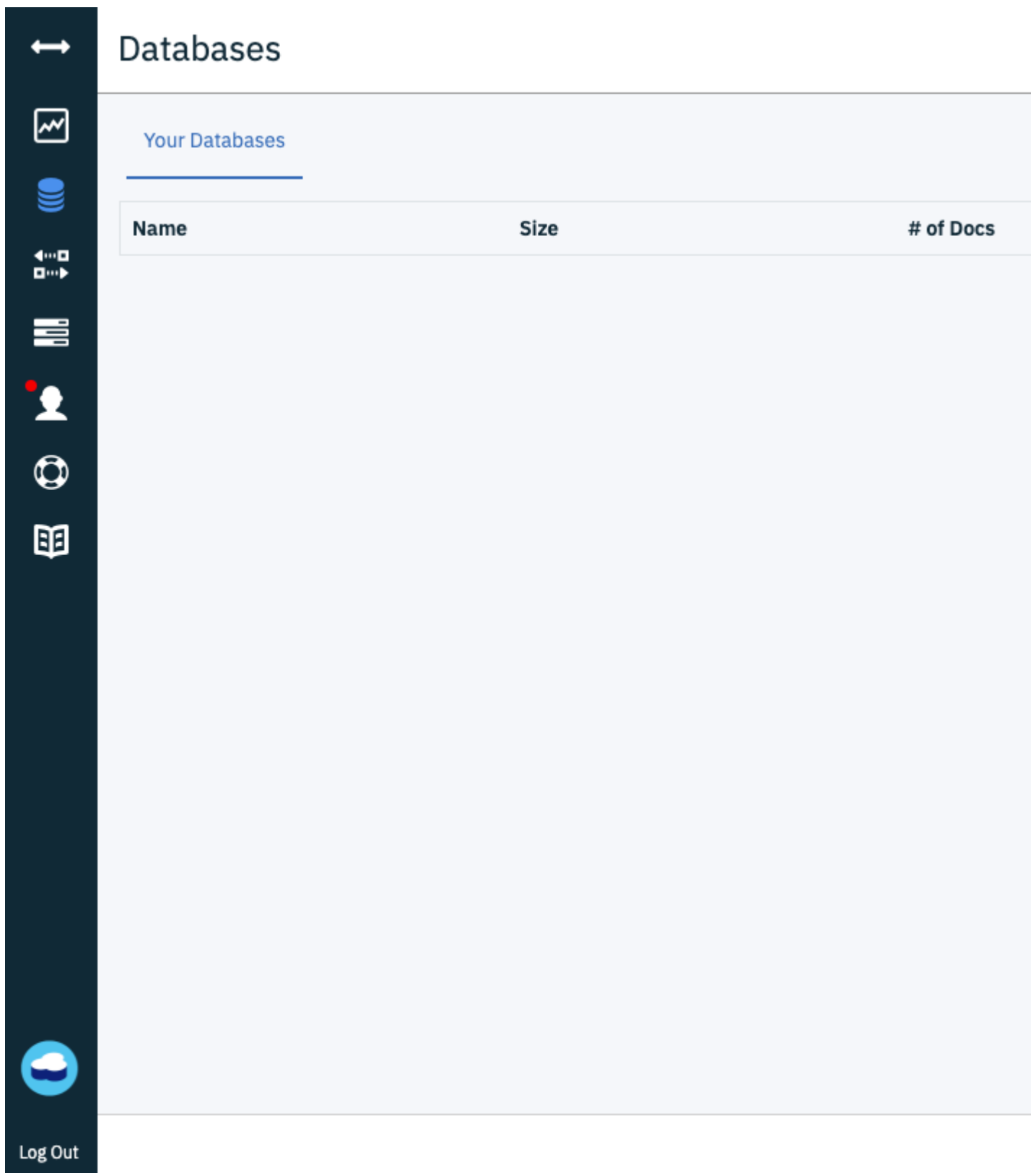
Databases

Your Databases

Name	Size	# of Docs
------	------	-----------

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.

Log Out

Databases

Your Databases

Name	Size	# of Docs
------	------	-----------

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

The screenshot shows a web application interface. On the left is a dark sidebar with several icons: a double-headed arrow, a line graph, a database cylinder, a document with arrows, a list, a person with a red dot, a globe, and a book. At the bottom of the sidebar is a 'Log Out' button. The top bar has a back arrow, the text 'training', a vertical menu icon, and a filter icon with the text 'No partition selected'. The main content area is a light blue rectangle. A blue arrow points from the bottom right towards the 'All Documents' tab in the sidebar.

training

No partition selected

All Documents

Query

Permissions

Changes

Design Documents

Log Out

Exercise 3 - Perform a simple insert

Step 1: Click on Create Document.

training

No partition selected

All Documents +

Query

Permissions

Changes

Design Documents +

Log Out

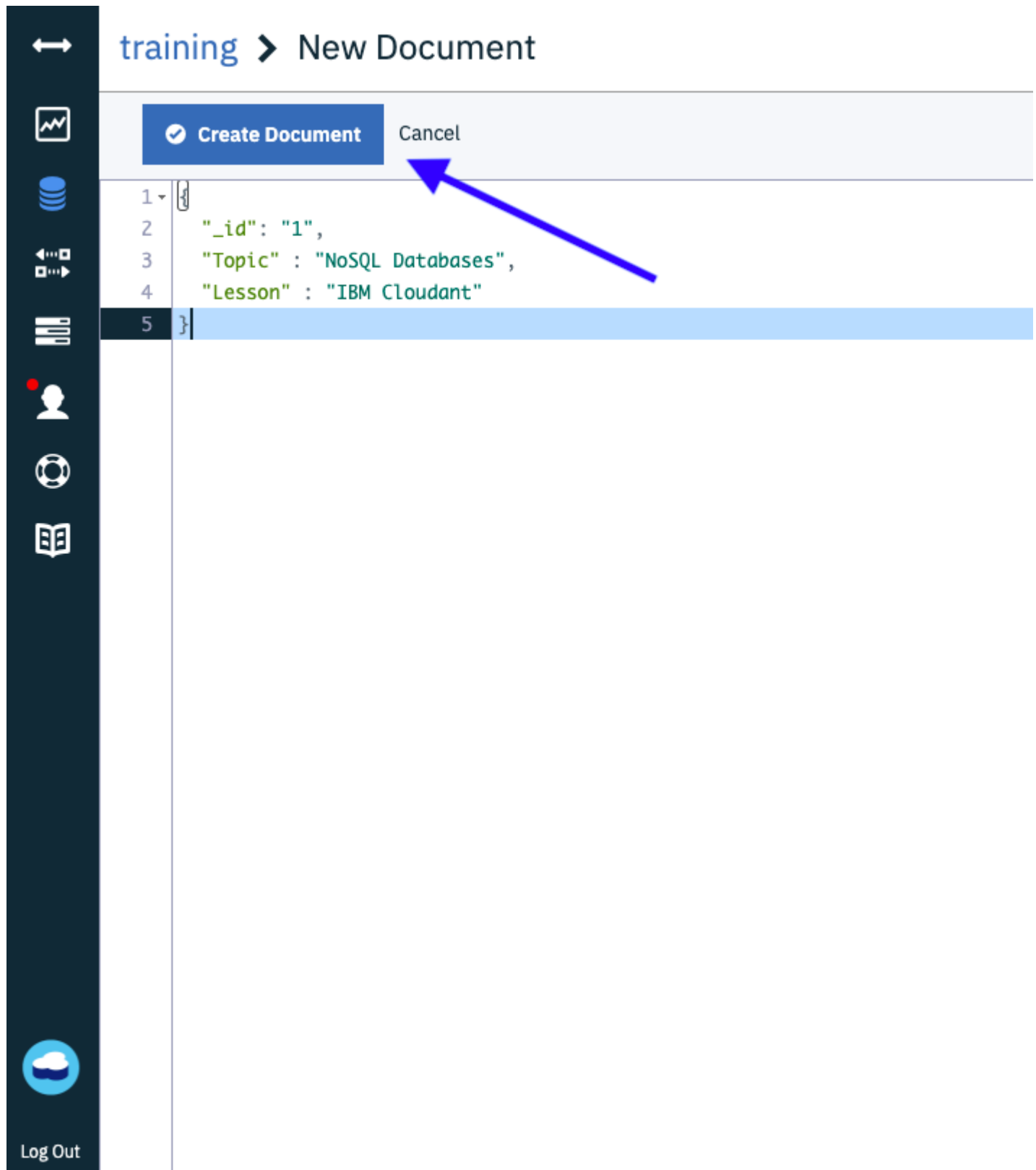
Step 2: Copy the below given JSON document and replace the default sample document given on the page.

```
1. 1
2. 2
3. 3
4. 4
5. 5

1. {
2.   "_id": "1",
3.   "Topic" : "NoSQL Databases",
4.   "Lesson" : "IBM Cloudant"
5. }
```

Copied!

Step 3: Click on Create Document



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

[illegible]

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

You should now see documents like this.

↔

⏪

training

⋮

📊

🗄️

🔗

🔄

👤

🛠️

📖

🌐

Log Out

All Documents

+

Query

Permissions

Changes

Design Documents

+

☐

Table

Metadata

{ }

Lesson

▼

☐

📄

IBM Cloudant

Showing 3 of 4 columns.

☐ Show all columns

Exercise 4 - Perform a simple query

Step 1: Click on Query.

[illegible]

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

- ```
1. 1
2. 2
3. 3
4. 4

1.
2. {
3. "selector": {}
4. }
```

Copied!

### Step 3: Click on Run Query

[illegible]

### Query history

Cloudant Query 

```
1 {
2 ... "selector": {}
3 }
```

```
2 | "selector": {}
```

3 }

Run Query

### Explain

manage indexes

Log Out

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

Table

Lesson

IBM Cloudant

Showing 3 of 4 columns.

Log Out

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 2: Click on the Replication icon.

training > Cloudant Query

Query history

Cloudant Query ?  
1 {  
2 "selector": {}  
3 }  

Run Query Explain manage indexes  
Executed in 2 ms

Table Lesson IBM Cloudant

Showing 3 of 4 columns.

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

Log Out

# Replication

Replicator DB Activity

\_replicate Activity

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

Filter replications

|                       | Source ▾ | Target ▾ |
|-----------------------|----------|----------|
| There is no replicatc |          |          |

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

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8
- 9. 9
- 10. 10
- 11. 11
- 12. 12

13. 13
14. 14
15. 15
16. 16

- 1.
2. Under Source
3.   Select Type = Local database
4.   Select Name = training
5.   Select Authentication = "IAM Authentication"
6.   Paste the api key you copied earlier in the IAM API Key textbox.
- 7.
8. Under Target
9.   Select Type = New local database
10.   Select Name = training\_replica
11.   Select Authentication = "IAM Authentication"
12.   Paste the api key you copied earlier in the IAM API Key textbox.
- 13.
14. Under Options:
15.   Select Type = Continuous
- 16.

Copied!

Step 5: Click on Start Replication.



[illegible]

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

Log Out

# Replication

Replicator DB Activity

\_replicate Activity

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

Filter replications

| <input type="checkbox"/> | Source ▾                                                                                                                                                            | Target ▾                                                                                                                                                            |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <a href="https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com/training">https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com/training</a> | <a href="https://4646e655-6aee-42d8-8b93-d2bc-bluemix.cloudant.com/training_replica">https://4646e655-6aee-42d8-8b93-d2bc-bluemix.cloudant.com/training_replica</a> |

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

Databases

Your Databases

| Name                             | Size   | # of Docs |
|----------------------------------|--------|-----------|
| <a href="#">_replicator</a>      | 4.7 KB | 2         |
| <a href="#">training</a>         | 1.1 KB | 1         |
| <a href="#">training_replica</a> | 1.2 KB | 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 + |  |

☐

Table

Metadata

{} JSON

Lesson ▼

- ☐ IBM Cloudant

Showing 3 of 4 columns.    ☐ Show all columns.

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.

Replication

Replicator DB Activity

\_replicate Activity

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

T Filter replications

| <input type="checkbox"/> | Source ▾                                                                                   | Target ▾                                                                 |
|--------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <input type="checkbox"/> | <a href="#">https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com/training</a> | <a href="#">https://4646e655-6aee-42d8-bluemix.cloudant.com/training</a> |

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

Here is a sample Active Tasks view.

Active Tasks

Polling Interval15 seconds

{ }JSON

All TasksReplicationDatabase CompactionIndexerView Compaction

Search for databases...

| Type        | Database                                                                                                                                                                 | Started on                                | Updated on                                | PID          | Status                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|--------------|-------------------------------------------------------------------------|
| replication | From: https://d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix.cloudant.com/orders/<br>To: https://d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix.cloudant.com/orders-replica/ | Jun 9th, 10:34:20 am<br>a minute ago      | Jun 9th, 10:35:40 am<br>a few seconds ago | 0.27010.5142 | 7341 docs written.<br>44301 pending changes.                            |
| indexer     | shards/b0000000-bffffff/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088<br>(View: _design/app)                                                            | Jun 9th, 10:35:38 am<br>a few seconds ago | Jun 9th, 10:35:41 am<br>a few seconds ago | 0.12427.5145 | Progress: 96%<br>Processed 2929 of 3029 changes.<br>2929 Changes done.  |
| indexer     | shards/60000000-6ffffff/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088<br>(View: _design/app)                                                            | Jun 9th, 10:35:38 am<br>a few seconds ago | Jun 9th, 10:35:41 am<br>a few seconds ago | 0.19505.5145 | Progress: 100%<br>Processed 3074 of 3073 changes.<br>3074 Changes done. |
| indexer     | shards/e0000000-efffffff/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088<br>(View: _design/app)                                                           | Jun 9th, 10:35:38 am<br>a few seconds ago | Jun 9th, 10:35:41 am<br>a few seconds ago | 0.21199.5144 | Progress: 93%<br>Processed 2929 of 3123 changes.<br>2929 Changes done.  |
| indexer     | shards/d0000000-dffffff/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088<br>(View: _design/app)                                                            | Jun 9th, 10:35:38 am<br>a few seconds ago | Jun 9th, 10:35:41 am<br>a few seconds ago | 0.21474.5145 | Progress: 91%<br>Processed 2929 of 3187 changes.<br>2929 Changes done.  |
| indexer     | shards/a0000000-afffffff/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088<br>(View: _design/app)                                                           | Jun 9th, 10:35:38 am<br>a few seconds ago | Jun 9th, 10:35:41 am<br>a few seconds ago | 0.22817.5145 | Progress: 94%                                                           |

# 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.

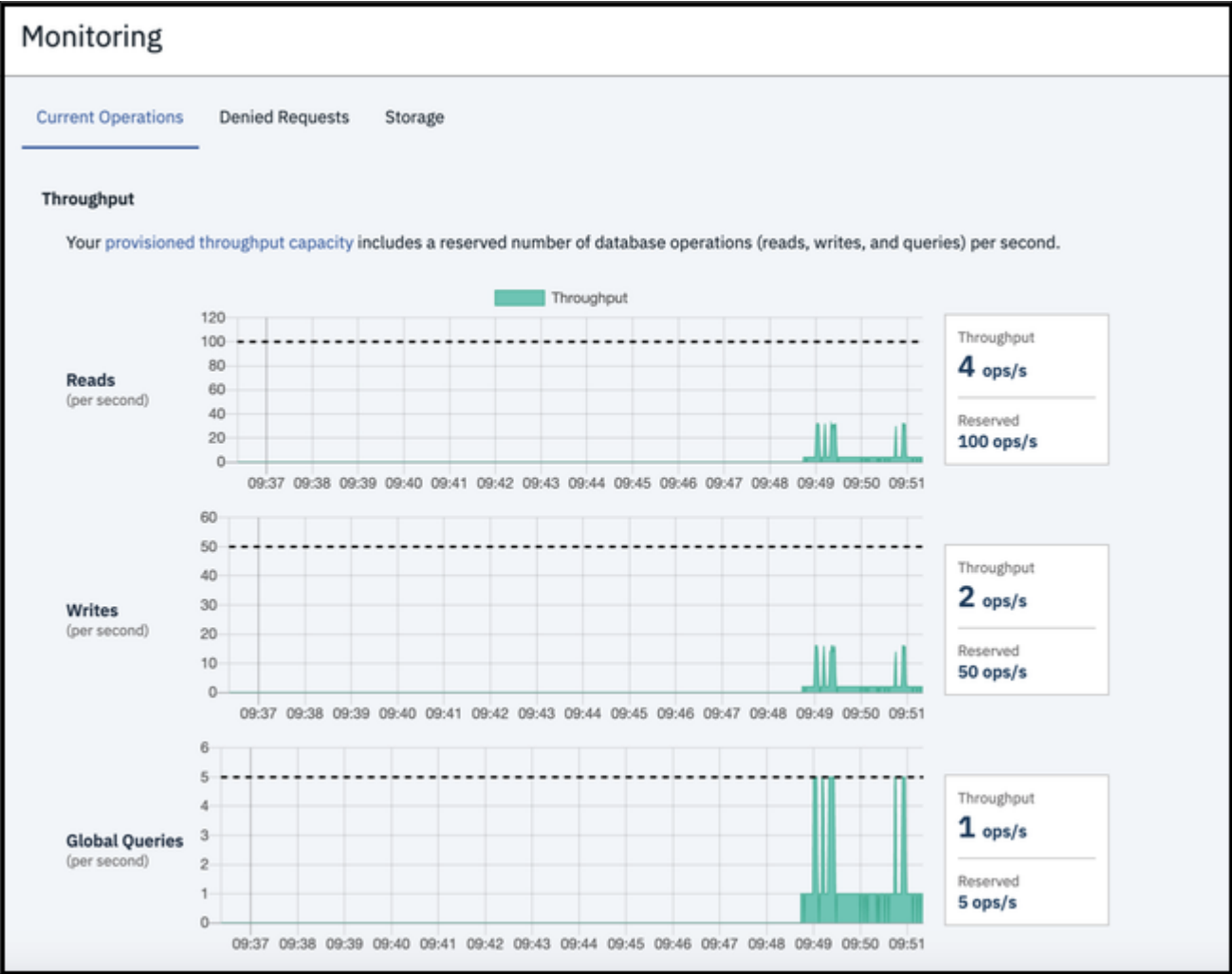
Active Tasks

All TasksReplicationDatabase CompactionIndexerView CompactionSearch for tasks

| Type             | Database | Started on ▲ |
|------------------|----------|--------------|
| No active tasks. |          |              |

Log Out

Here is a sample monitoring view for Current Operations.

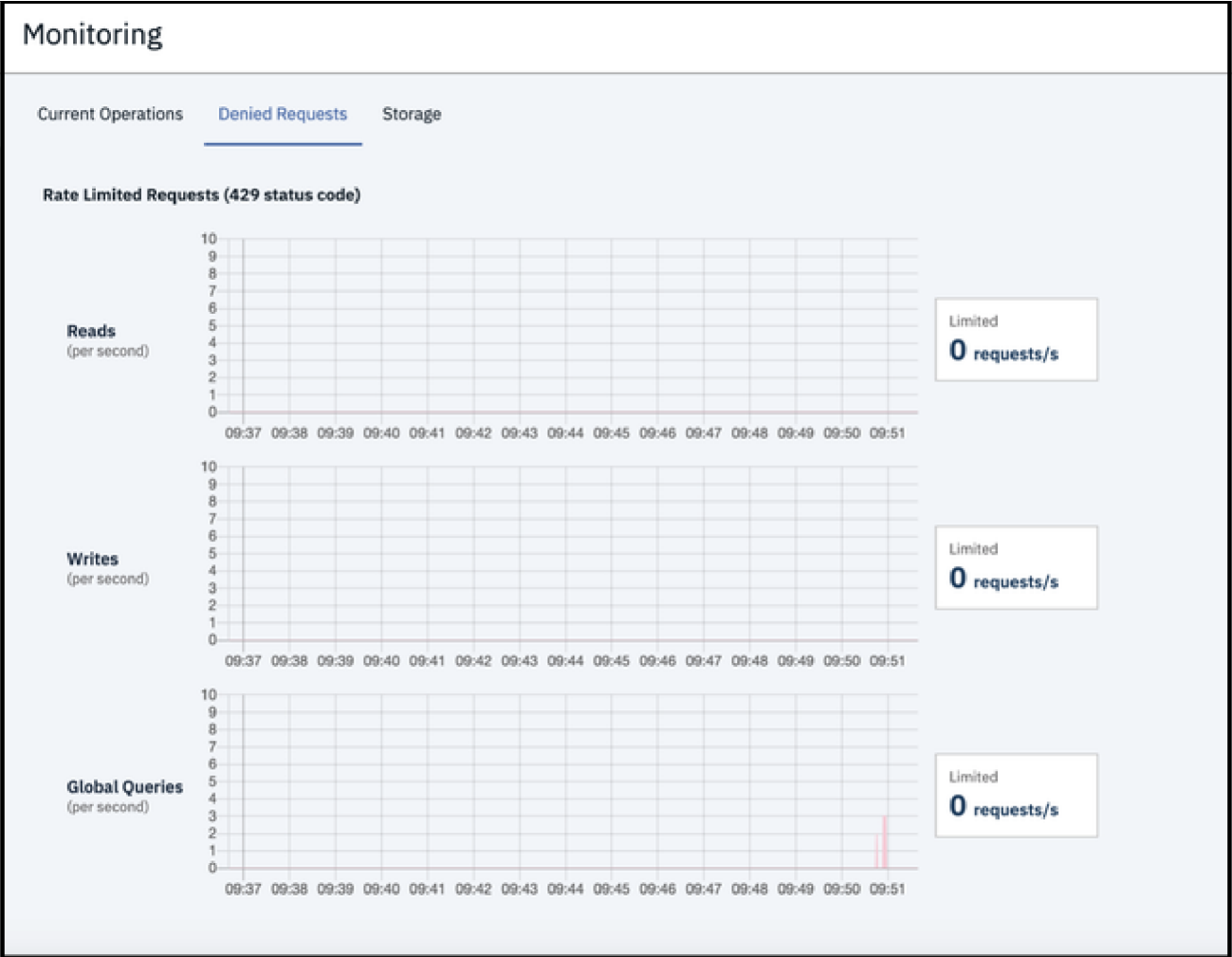


Note: Your monitoring output could be different from the screen shot above, mostly 0 ops/s as there may not be any load on your instance.

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.

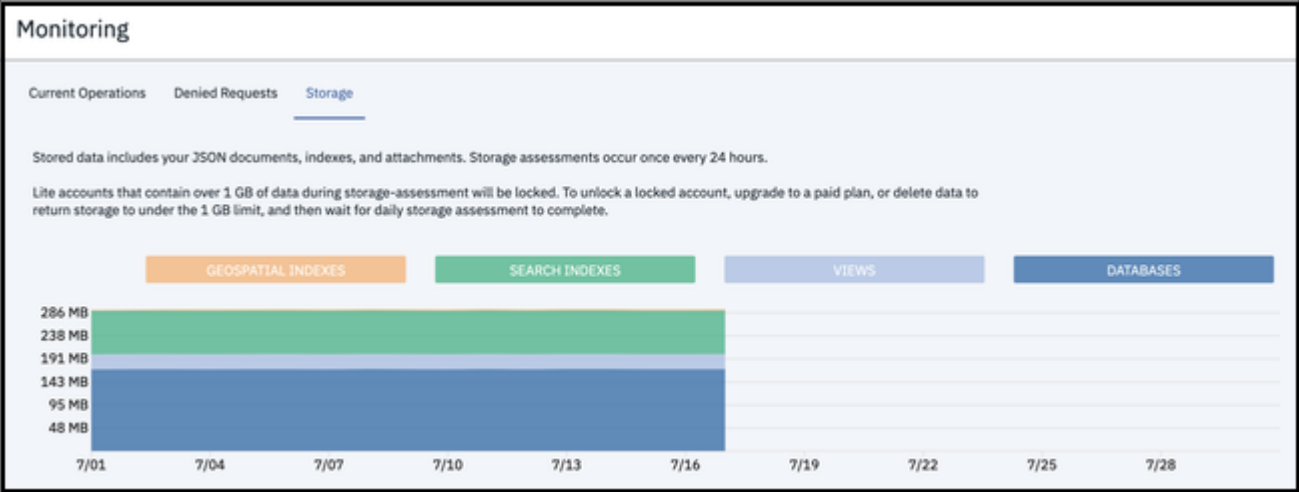




Note: Your monitoring output could be different from the screen shot above, depending upon your usage.

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 document.*

▼ 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.

1. 1
2. 2
3. 3
4. 4
5. 5

```
1. {
2. "_id": "1",
3. "Topic" : "NoSQL Databases",
4. "Lesson" : "MongoDB"
5. }
```

Copied!

## 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.

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12
13. 13
14. 14
15. 15
16. 16

- 1.
2. Under Source
3. Select Type = Local Database
4. Select Name = test
5. Select Authentication = "IAM Authentication"
6. Paste the api key you copied earlier in the IAM API Key textbox.
- 7.
8. Under Target
9. Select Type = Local Database

10.

Select Name = test\_replica
11.

Select Authentication = "IAM Authentication"
12.

Paste the api key you copied earlier in the IAM API Key   textbox.
13.
14.

Under Options:
15.

Select Type = Continuous
16.

Copied!

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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