

# 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 Databases 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

Ra

Resource list /

mycloudant

Active

Add tags

Manage

Service credentials

Plan

Connections

Overview

Dashboard

Capacity

Docs

Deployment details

CRN

crn:v1:bluemix:public:cloudantnosqldb:eu-gb:a/9ff7e8c5d25d4ac7aa5dcdf28618b4db5a8db9::

Location

London

External Endpoint

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

External Endpoint (preferred)

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

Authentication methods

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

Activity Tracker event types

Management

Save

Disk encryption

Yes. Automatically generated disk encryption key.

Capacity details

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Log Out

Databases

Database name ▼

Your Databases

Name	Size	# of Docs	Partitioned
Showing 1–0 of 0 databases			

Step 1: Click on Create Database.

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Databases

Database name ▼

Your Databases

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

Log Out

Showing 1–0 of 0 database

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

Step 3: Select 'Non-partitioned'.

Step 4: Click on Create.

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Log Out

Databases

Database name ▼

Your Databases

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

Showing 1–0 of 0 databa

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


The screenshot shows the AWS IAM console interface. On the left, a dark sidebar contains navigation icons. The main content area is titled 'training' and shows a list of documents. The 'All Documents' tab is selected, displaying a message: 'No Documents Found'. A blue arrow points from the 'All Documents' tab to the 'No Documents Found' message. The bottom right corner indicates 'Showing 0 documents'.

### Exercise 3 - Perform a simple insert

Step 1: Click on Create Document.

<
training
No partition selected
Document ID

All Documents +	
Query	
Permissions	
Changes	
Design Documents +	



No Documents Found

Log Out
Showing 0 documents

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

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training > New Document

✓ Create Document

Cancel

1 {

2    "\_id": "1",

3    "Topic": "NoSQL Databases",

4    "Lesson": "IBM Cloudant"

5 }

Log Out

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

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⏪ training ⋮

Document ID

All Documents +

Query

Permissions

Changes

Design Documents +

Log Out

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Table Metadata {} JSON

	id	key	valu
<div>☐ 📄</div>	1	1	{ "re

Showing document 1

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

You should now see documents like this.



<
training
⋮
Document ID

**All Documents** +

---

Query

---

Permissions

---

Changes

---

Design Documents

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

Showing 3 of 4 columns. ☐ Show all columns.
Showing document 1

## Exercise 4 - Perform a simple query

Step 1: Click on Query.

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training

⋮

All Documents

+

Query

Permissions

Changes

Design Documents

+

Document ID

Table

Metadata


{ } JSON

Lesson

Topic

\_Id

☐

 IBM Cloudant

NoSQL Databases

1

Showing 3 of 4 columns. ☐ Show all columns.

Showing document 1

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

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training > Cloudant Query

Query history

Cloudant Query ?

1

2

3

"selector": {}

Run Query

Explain

manage indexes

Log Out

No Documents Found

Showing 0 documents

You will see the query results.

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training > Cloudant Query

Query history

Cloudant Query

1 {

2 "selector": {}

3 }

Run Query

Explain

manage indexes

Executed in 2 ms

Table

{ } JSON

Lesson

Topic

IBM Cloudant

NoSQL Databases

Showing 3 of 4 columns. ☐ Show all columns.

Showing document 1

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.

[illegible]

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

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Replication

Pollin

Replicator DB Activity

\_replicate Activity

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

Filter replications

<input type="checkbox"/>	Source ▾	Target ▾	Start Time ▲	Type ▾
There is no replicator-db activity or history to display.				

Log Out

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.

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

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Replication

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Log Out

Replicator DB Activity

\_replicate Activity

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

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Filter replications

<input type="checkbox"/>	Source ▾	Target ▾	Start Time ▲	Type ▾
<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

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





<
training\_replica
Document ID

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

☐

Table Metadata {} JSON

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

Showing 3 of 4 columns. ☐ Show all columns.
Showing

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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Replication

Polling

Replicator DB Activity

\_replicate Activity

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

Filter replications

Source	Target	Start Time	Type
<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-d2bde6e9a6ca-bluemix.cloudant.com/training_replica">https://4646e655-6aee-42d8-8b93-d2bde6e9a6ca-bluemix.cloudant.com/training_replica</a>	Apr 12th, 4:11 pm	Continuo

Log Out

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.

Active Tasks

15 seconds

JSON

All Tasks

Replication

Database Compaction

Indexer

View Compaction

Search for databases...

Type	Database	Started on	Updated on	PID	Status
replication	From: <a href="https://d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix.cloudant.com/orders/">https://d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix.cloudant.com/orders/</a> To: <a href="https://d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix.cloudant.com/orders-replica/">https://d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix.cloudant.com/orders-replica/</a>	Jun 9th, 10:34:20 am a minute ago	Jun 9th, 10:35:40 am a few seconds ago	0.27010.5142	7341 docs written. 44301 pending changes.
indexer	shards/60000000-bfmmmm/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088 (View: _design/app)	Jun 9th, 10:35:38 am a few seconds ago	Jun 9th, 10:35:41 am a few seconds ago	0.12427.5145	Progress: 96% Processed 2929 of 3029 changes. 2929 Changes done.
indexer	shards/60000000-bfmmmm/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088 (View: _design/app)	Jun 9th, 10:35:38 am a few seconds ago	Jun 9th, 10:35:41 am a few seconds ago	0.19505.5145	Progress: 100% Processed 3074 of 3073 changes. 3074 Changes done.
indexer	shards/60000000-bfmmmm/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088 (View: _design/app)	Jun 9th, 10:35:38 am a few seconds ago	Jun 9th, 10:35:41 am a few seconds ago	0.21199.5144	Progress: 93% Processed 2929 of 3123 changes. 2929 Changes done.
indexer	shards/60000000-bfmmmm/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088 (View: _design/app)	Jun 9th, 10:35:38 am a few seconds ago	Jun 9th, 10:35:41 am a few seconds ago	0.21474.5145	Progress: 91% Processed 2929 of 3187 changes. 2929 Changes done.
indexer	shards/60000000-bfmmmm/d360fd11-57ef-46cd-af46-496f14ace2bb-bluemix/orders.1549538088 (View: _design/app)	Jun 9th, 10:35:38 am a few seconds ago	Jun 9th, 10:35:41 am a few seconds ago	0.23687.5145	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.

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Log Out

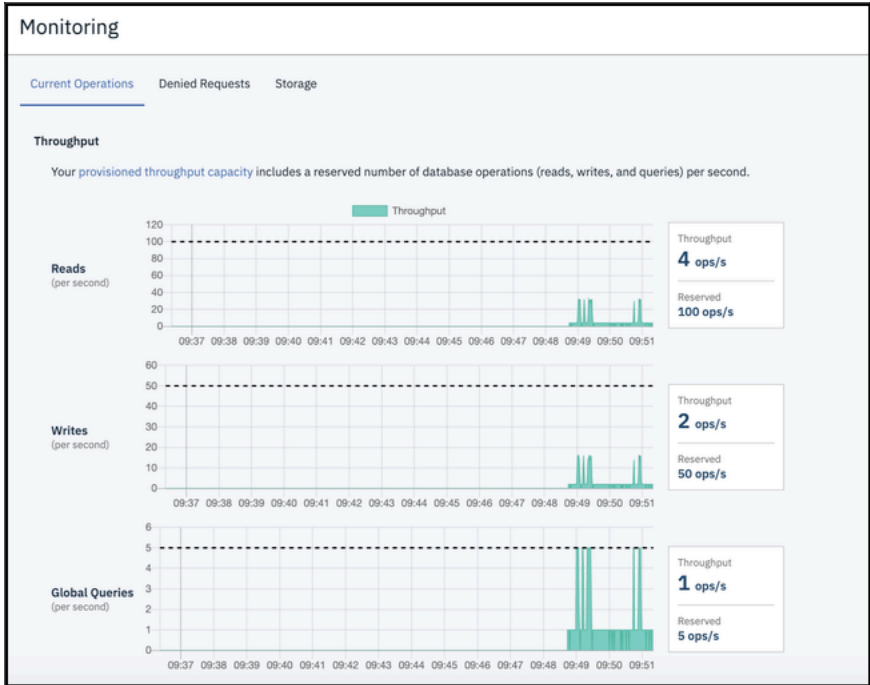
# Active Tasks

Polling Inter

All TasksReplicationDatabase CompactionIndexerView CompactionSearch for databases...

Type	Database	Started on	Updated on	PID
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.

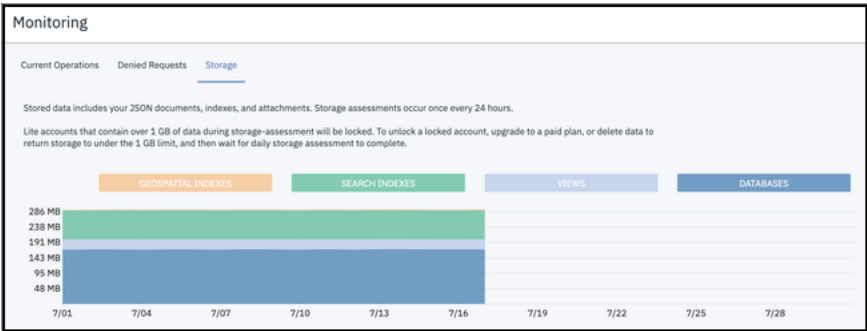
Here is a sample monitoring view for Denied Requests. Whenever we perform more reads or writes than our plan allows, those requests will be denied and shown here.



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

- Problem:
 

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

► Click here for Hint
- Problem:
 

*Insert a sample document.*

► Click here for Hint
- Problem:
 

*Setup continuous replication between test and test\_replica databases.*

► Click here for Hint
- Problem:
 

*Find out if any denied requests were denied.*

► Click here for Hint

## Authors

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