

IBM Accelerator

Talent Identification Program

Week 6: Back End Hosts, SDKs & Design Patterns

Pre-session Materials

Requirements

All procedures listed for Weeks 1-5 are assumed completed for Week 6.

Pre-Session Materials

You are not required to go through all these guides and tutorials, but they are strongly recommended to understand the foundation of the concepts to be discussed.

What is a REST API

<https://www.redhat.com/en/topics/api/what-is-a-rest-api>

Rest APIS

<https://www.ibm.com/cloud/learn/rest-apis>

Microservices Architecture

<https://www.ibm.com/cloud/architecture/architectures/microservices>

Modernizing Applications

<https://www.ibm.com/cloud/architecture/architectures/application-modernization>

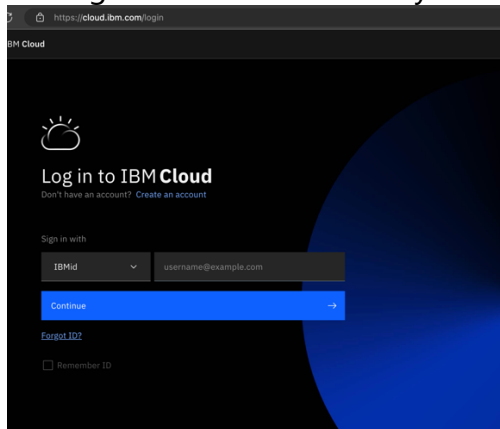
JavaScript Asynchronous Programming and Callbacks

<https://nodejs.org/en/learn/asynchronous-work/javascript-asynchronous-programming-and-callbacks>

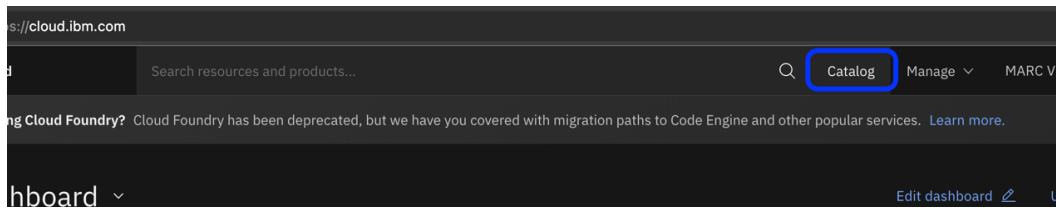
Walkthrough for Creating Cloudant DB in IBM Cloud

The following documents how to create Cloudant in IBM Cloud and configure for the lab, you'll be given access to an IBM Cloud account later in the subsequent weeks.

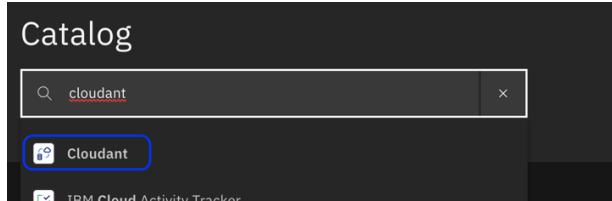
1. Log in to IBM Cloud with your free/trial account.



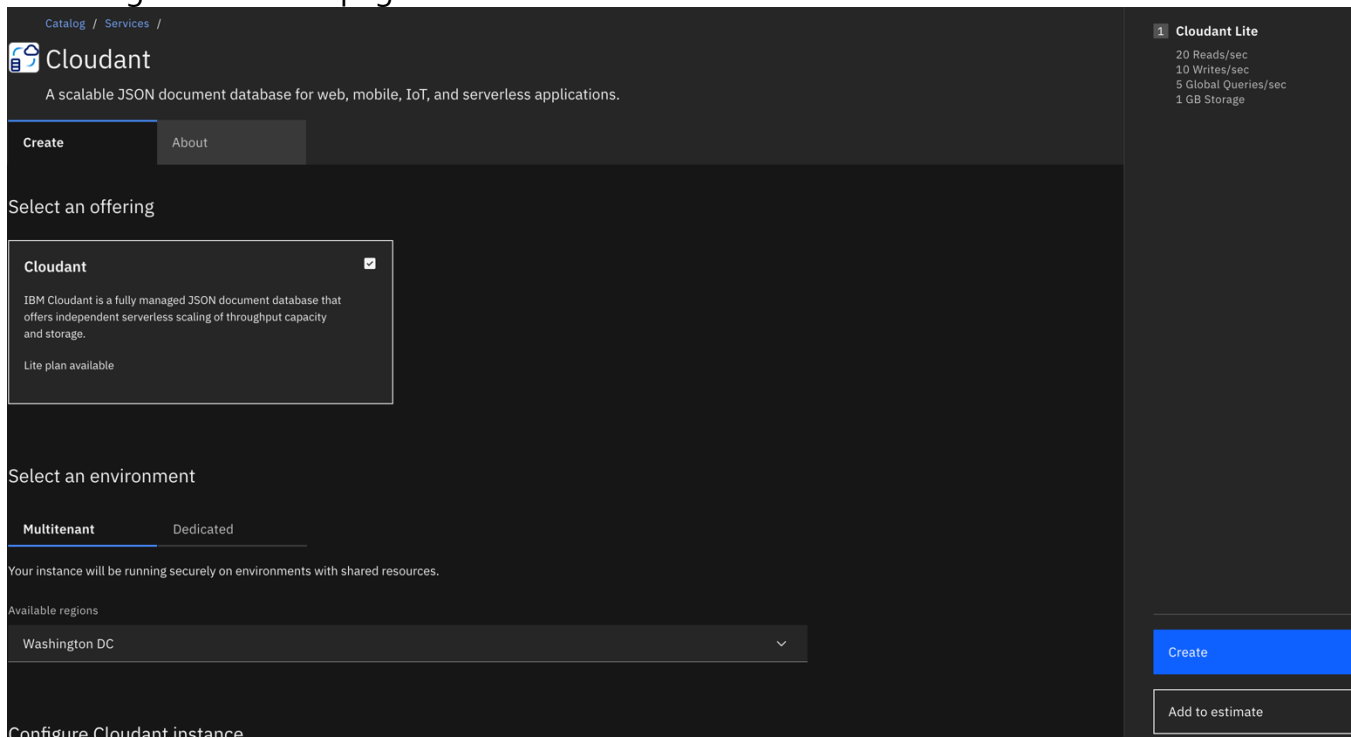
2. Click "Catalog" along the top right of the page.

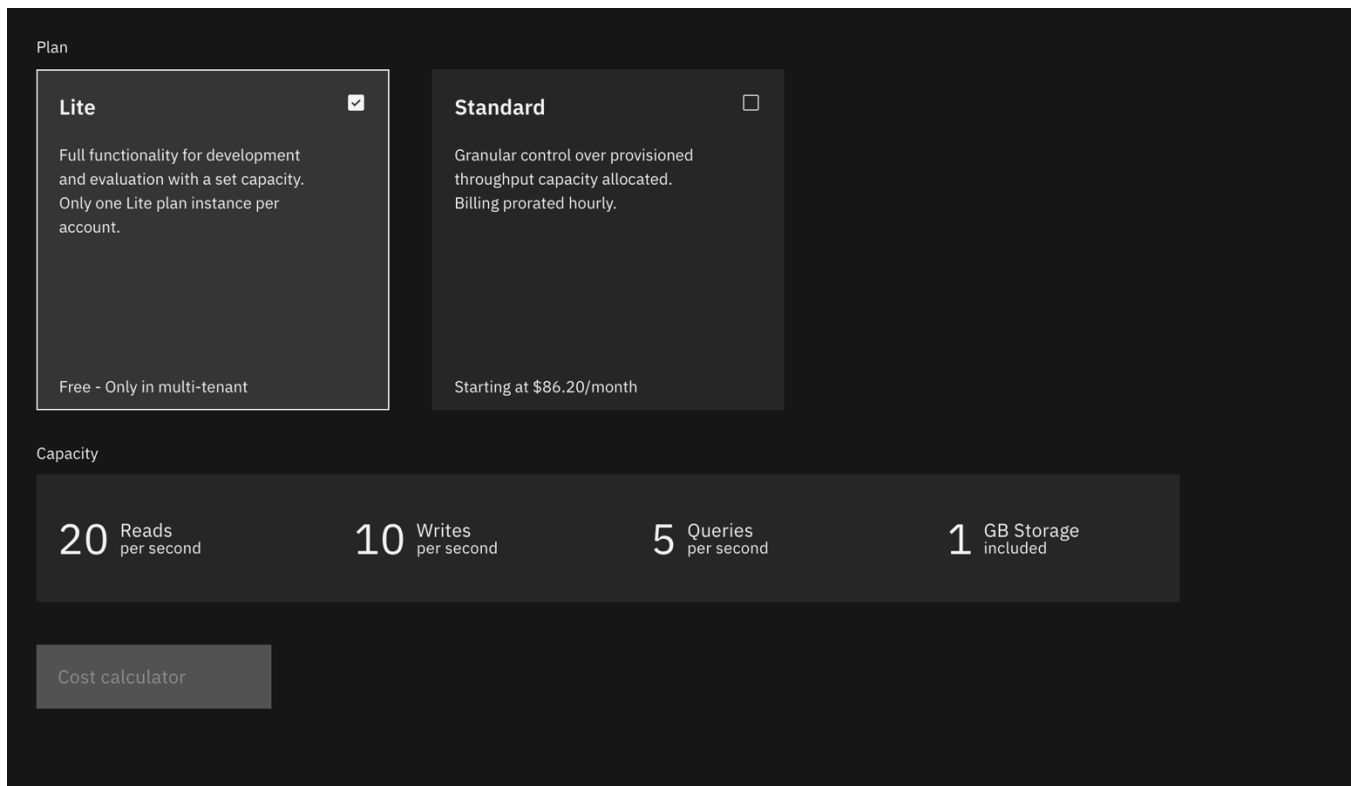


3. In the search bar type in "cloudant" and select the first option returned (the cloudant service).

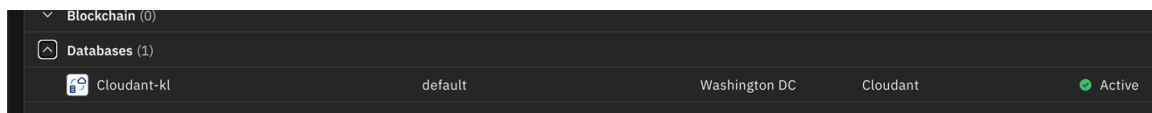
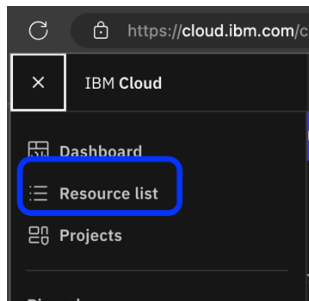


4. Accept all the defaults and scroll to the bottom, the "Lite" plan should be selected which on the right side of the page shows as "free".

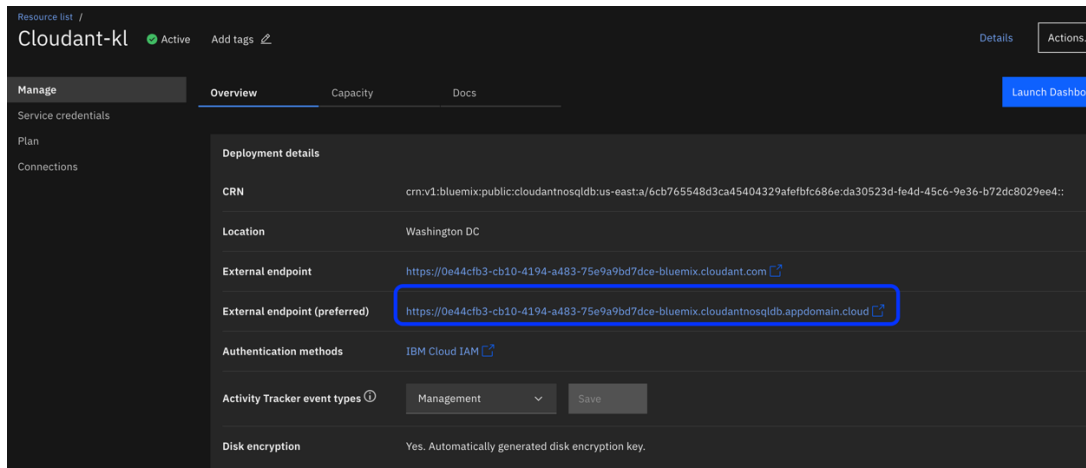




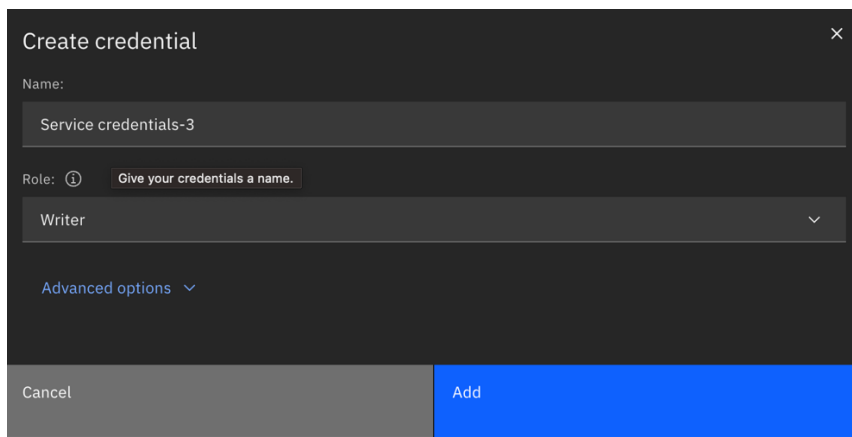
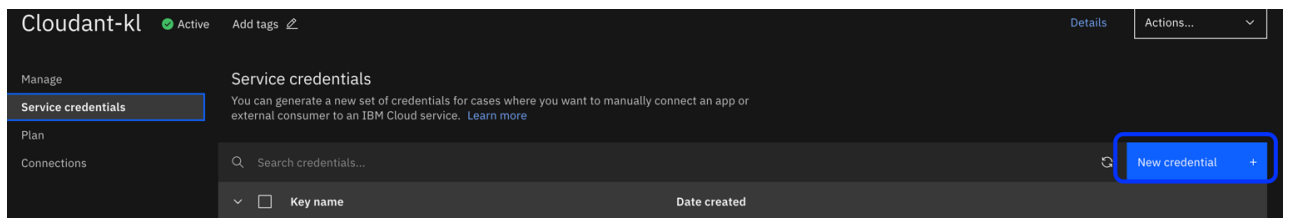
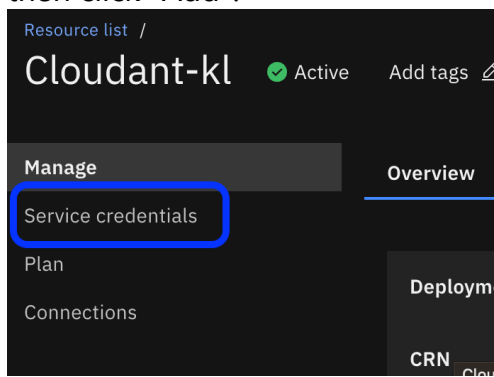
5. Click the "Create" button on the lower right side of the page.
6. The cloudant DB will create and make take some minutes to provision. You can view your cloudant resource from the hamburger menu on the top left -> "Resource List", then expand "Databases", your instance will be there and you can monitor it's provisioning progress, when it has a Status of "Active" then it's good to use.



7. Select your Cloudant DB from this page, you will now see a display for managing your cloudant DB. Copy the value for "External endpoint (preferred)".



8. Go to the left side tab and select "Service credentials", now click the "New credential" button, you can specify any name or the default, and select a role of "writer" for now, then click "Add".



- Once your service credential is created expand it and you should see a number of lines of information, you'll want to copy the value of "apikey":

```
Service credentials-3 2023-07-09 10:47 PM
{
  "apikey": "cwo1uoJqYL-l8jb_rDTL333XCZFwu_T2yWVSOHvp_XK_",
  "host": "0e44cfb3-cb10-4194-a483-75e9a9bd7dce-bluemix.cloudantnosqldb.appdomain.cloud",
  "iam_apikey_description": "Auto-generated for key crn:v1:bluemix:public:cloudantnosqldb:us-east:a/6cb765548d3ca45404329afebfc686e:d30523d-fe4d-45c6-9e36-b72dc8029ee4:resource-key:54298adc-a288-41d8-a093-24838256f134",
  "iam_apikey_name": "Service credentials-3",
  "iam_role_crn": "crn:v1:bluemix:public:iam:::serviceRole:Writer",
  "iam_serviceid_crn": "crn:v1:bluemix:public:iam-identity::a/6cb765548d3ca45404329afebfc686e::serviceid:ServiceId-a0be64b5-9261-4663-9aaf-27a2177045db",
  "url": "https://0e44cfb3-cb10-4194-a483-75e9a9bd7dce-bluemix.cloudantnosqldb.appdomain.cloud",
  "username": "0e44cfb3-cb10-4194-a483-75e9a9bd7dce-bluemix"
}
```

For example:

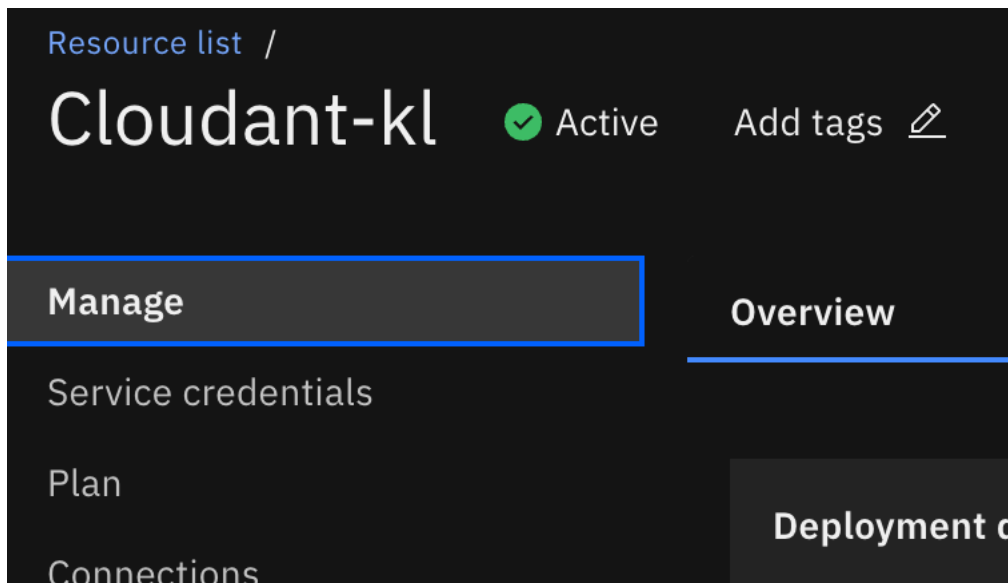
"apikey": "cwo1uoJqYL-l8jb_rDTL333XCZFwu_T2yWVSOHvp_XK_",

We will want to copy the value:

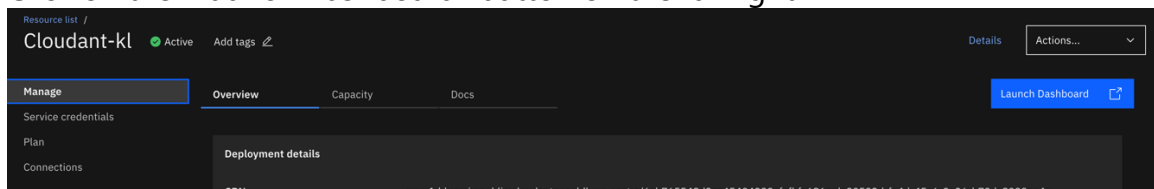
cwo1uoJqYL-l8jb_rDTL333XCZFwu_T2yWVSOHvp_XK_

Creating a design document and index

- Access your cloudant DB resource from IBM Cloud, and click on the "Manage" tab for your instance.

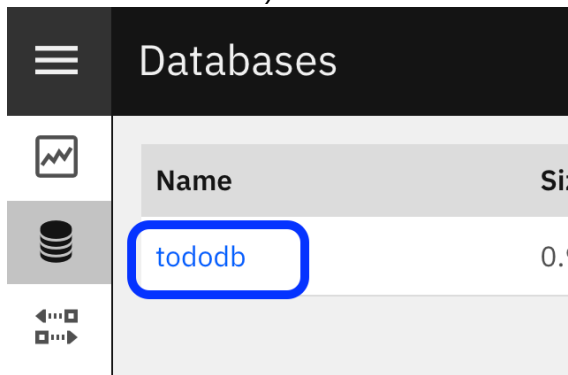


- Click on the "Launch Dashboard" button on the far right

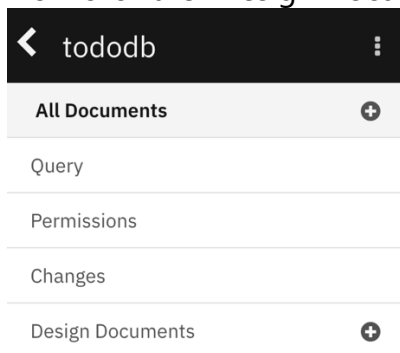


- Select the database icon from the left (looks like a cylinder with three disks) then select the "tododb" database.

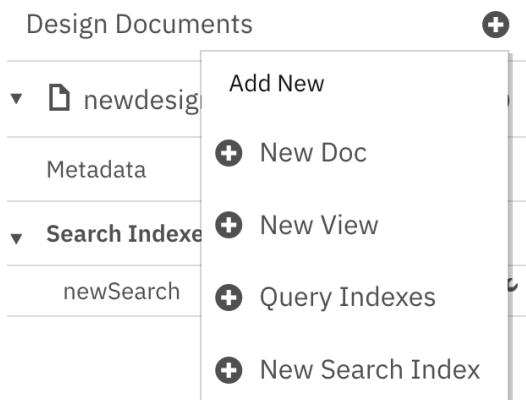
From the lab this is the database that is created from our first steps to store todos in cloudant (the database is created on our first start of the backend service when we attach to cloudant).



4. Now click the "Design Document +" button:



5. Select "New Search Index"



6. Select the defaults, and in the function specify *(index "task", doc.task);*
7. Then click on the "Create Document and Build Index" button

New Search Index

Save to design document ?

New document

_design/

newDesignDoc

Index name

newSearch

Search index function ?

```
1 function (doc) {  
2   index("task", doc.task);  
3 }
```

Analyzer

Single

Multiple

Type

Standard

✓ Create Document and Build Index


Cancel

8. Make note of the Index name and the design doc name as you'll use them later in the code for the search function from the backend, for example:

```
await client.postSearch({  
  db: todoDBName,  
  ddoc: 'newdesign',  
  query: 'task:'+searchField,  
  index: 'newSearch'  
}).then(response => {  
  search_results=response.result;  
  console.log(response.result);  
});
```

9. Before you go to do lab for searching, verify the search index is working from within cloudant, notice your newly created search index shows up under the "Search Indexes" drop down, select it and you'll see a text box and button to run a search. You need to use the cloudant syntax for a search, so for example in our case our documents start with "task" then a field value for the task name, so we'll search like:
"task:<search value>"

See here an example searching for tasks of the name "test":

All Documents	+
Query	
Permissions	
Changes	
Design Documents	+
▼  newdesign	+
Metadata	
▼ Search Indexes	
newSearch	⚙

task:test

Run Query



id: "169068c4a8bb599348fab792f9dd76c"

```
{
  "id": "169068c4a8bb599348fab792f9dd76c",
  "order": [
    0.5945348143577576,
    0
  ],
  "fields": {}
}
```

id: "53a201072c0615917fa18bc49fe0cafe"

```
{
  "id": "53a201072c0615917fa18bc49fe0cafe",
  "order": [
    0.5945348143577576,
    1
  ],
  "fields": {}
}
```