

Sprint-2

CREATE A DATABASE IN CLOUDANT DB

Date	11-11-2022
Team ID	PNT2022TMID07818
Project Name	Project – IOT based safety gadget for child safety monitoring and notification
Maximum Marks	4 Marks
Submitted By	Aravind. C Melsiya.S Sriragavi.S Sneha.R

Aim: To create a database in Cloudant DB to store location data.

Steps followed:

- Logged in to IBM Cloud account
- Navigated to `./resources`
- Clicked on the “Create Resource +” button
- Searched for “Cloudant”
- Chose the “Lite Version” and clicked on “Create”

The screenshot displays the IBM Cloud console interface for creating a new Cloudant database. On the left, the 'Authentication method' is set to 'IAM'. Under the 'Plan' section, the 'Lite' plan is selected with a checkbox, while the 'Standard' plan is unselected. The 'Lite' plan description states: 'Full functionality for development and evaluation with a set capacity. Only one Lite plan Instance per account.' and notes it is 'Free - Only in multi-tenant'. The 'Standard' plan description mentions 'Granular control over provisioned throughput capacity allocated. Billing prorated hourly.' and is 'Starting at \$75.00/month'. Below the plans, the 'Capacity' section shows the selected limits: 20 Reads per second, 10 Writes per second, 5 Queries per second, and 1 GB Storage included. A 'Cost calculator' button is visible at the bottom left. On the right, a dark-themed 'Summary' panel lists the configuration: '1 Cloudant Lite' instance, 'Free' pricing, and the included capacity limits. At the bottom of the summary panel, there are two buttons: a blue 'Create' button and a white 'Add to estimate' button with a plus icon.

Authentication method ⓘ

IAM

Plan

Lite ☒
Full functionality for development and evaluation with a set capacity. Only one Lite plan Instance per account.
Free - Only in multi-tenant

Standard ☐
Granular control over provisioned throughput capacity allocated. Billing prorated hourly.
Starting at \$75.00/month

Capacity

20 Reads per second 10 Writes per second 5 Queries per second 1 GB Storage included

Cost calculator

Summary

1 Cloudant Lite Free

20 Reads/sec Free
10 Writes/sec Free
5 Global Queries/sec Free
1 GB Storage Included

Create

Add to estimate

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The Cloudant database resource was created successfully

The screenshot shows the IBM Cloud console interface. At the top, there's a navigation bar with 'IBM Cloud', a search bar, and links to 'Catalog', 'Manage', and 'Aravind C's Account'. Below this, the 'Resource list' section shows 'Cloudant-c26' with a green 'Active' status and an 'Add tags' link. The 'Manage' tab is selected, showing sub-tabs for 'Overview', 'Capacity', and 'Docs'. The 'Overview' tab is active, displaying 'Deployment details' for the database. The details include: CRN (crn:v1:bluemix:public:cloudantnosqldb:in-che:a/ec43bb5cb6ef47eaa000873b50f97aa:475a74c5-f35d-4207-8528-91c9f9ea3314::), Location (Chennai), External endpoint (https://969e2292-c417-4856-9696-c4c606203444-bluemix.cloudant.com), External endpoint (preferred) (https://969e2292-c417-4856-9696-c4c606203444-bluemix.cloudantnosqldb.appdomain.cloud), Authentication methods (IBM Cloud IAM), Activity Tracker event types (Management), and Disk encryption (Yes, Automatically generated disk encryption key). A 'Launch Dashboard' button is visible in the top right corner of the details section.

Resource list / Cloudant-c26 Active [Add tags](#) [Details](#) [Actions...](#)

Manage Overview Capacity Docs [Launch Dashboard](#)

Service credentials
Plan
Connections

Deployment details

CRN crn:v1:bluemix:public:cloudantnosqldb:in-che:a/ec43bb5cb6ef47eaa000873b50f97aa:475a74c5-f35d-4207-8528-91c9f9ea3314::

Location Chennai

External endpoint <https://969e2292-c417-4856-9696-c4c606203444-bluemix.cloudant.com>

External endpoint (preferred) <https://969e2292-c417-4856-9696-c4c606203444-bluemix.cloudantnosqldb.appdomain.cloud>

Authentication methods [IBM Cloud IAM](#)

Activity Tracker event types Management [Save](#)

Disk encryption Yes. Automatically generated disk encryption key.

Clicked on Launch Dashboard :

The screenshot shows the Cloudant 'Databases' dashboard. At the top, there's a 'Databases' header with a 'Database name' dropdown, a 'Create Database' button, and links for '{ } JSON', a book icon, and a bell icon. Below this, the 'Your Databases' section displays a table with one database entry. The table has columns for 'Name', 'Size', '# of Docs', 'Partitioned', and 'Actions'. The entry for 'aravi2631' shows a size of '14 bytes', 1 document, and is not partitioned. The 'Actions' column for this entry contains three icons: a left arrow, a right arrow, and a trash can. At the bottom, there's a pagination bar showing 'Showing 1-1 of 1 databases', 'Databases per page' set to 20, and a page number '1'.

Databases [Database name](#) [Create Database](#) [{ } JSON](#) [Book](#) [Bell](#)

Your Databases

Name	Size	# of Docs	Partitioned	Actions
aravi2631	14 bytes	1	No	Left Arrow Right Arrow Trash

Showing 1-1 of 1 databases. Databases per page 20 « 1 »

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Clicked on “Create Database”. Entered “aravi2631” as the database name and the “Non-partitioned” option

The screenshot shows the MongoDB Cloud console. On the left is a dark sidebar with navigation icons. The main area is titled 'Databases' and contains a table with the following data:

Name	Size	# of Docs	Partitioned
aravi2631	14 bytes	1	No

Below the table, it says 'Showing 1-1 of 1 database'. On the right, the 'Create Database' modal is open. It has a 'Database name' field with the value 'Child Safty' and a 'Partitioning' section with two options: 'Non-partitioned - recommended for most workloads' (selected) and 'Partitioned'. At the bottom of the modal are 'Cancel' and 'Create' buttons.

The database “aravi2631” was created successfully

The screenshot shows the MongoDB Cloud console for the 'aravi2631' database. The left sidebar has a menu with 'All Documents' selected. The main area shows a table with columns 'id', 'key', and 'value'. The first row contains the following data:

id	key	value
be3cb9d0e35530a2fe0ded4e0845fe77	be3cb9d0e35530a2fe0ded4e0845fe77	{ "rev": "1-4dbd80ab6e655d7ba1af92bca8563..." }

At the bottom right, it says 'Showing document 1 - 1. Documents per page: 20'. There are also buttons for 'Table', 'Metadata', and 'JSON' at the top of the document list.

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Result:

A database to store the location data was created successfully on Cloudant DB

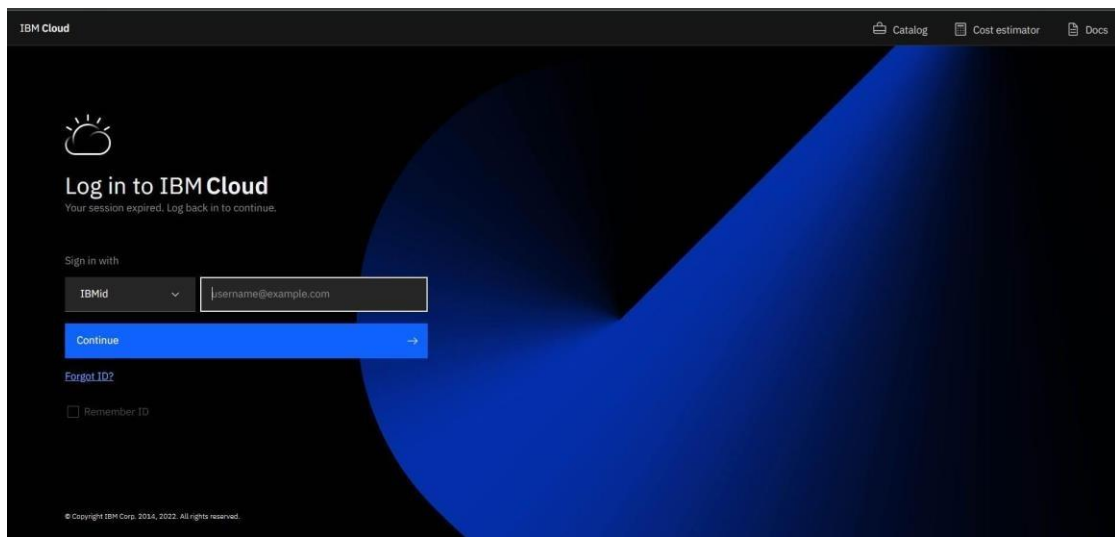
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CREATE IBM WATSON IOT PLATFORM AND DEVICE

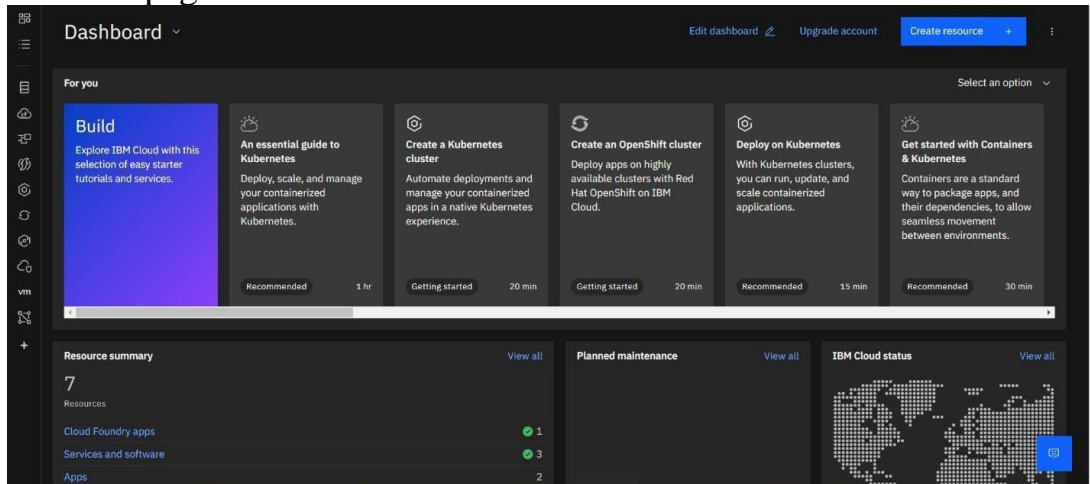
1. To create the IBM Watson IOT platform and device

STEPS:

1. create an IBM cloud account with the individual IBM id and password

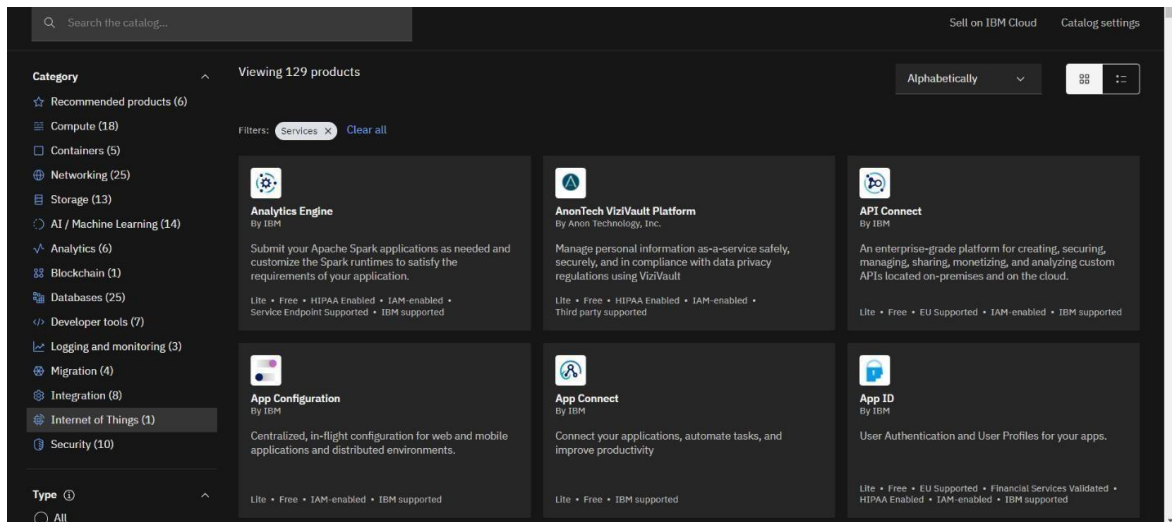


2. Home page of IBM cloud

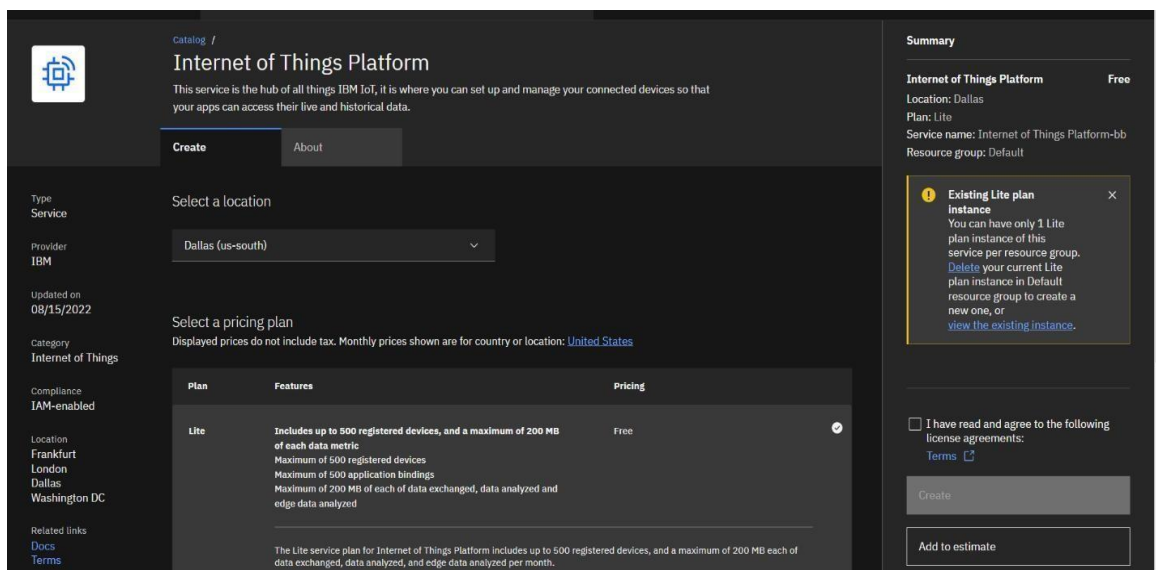


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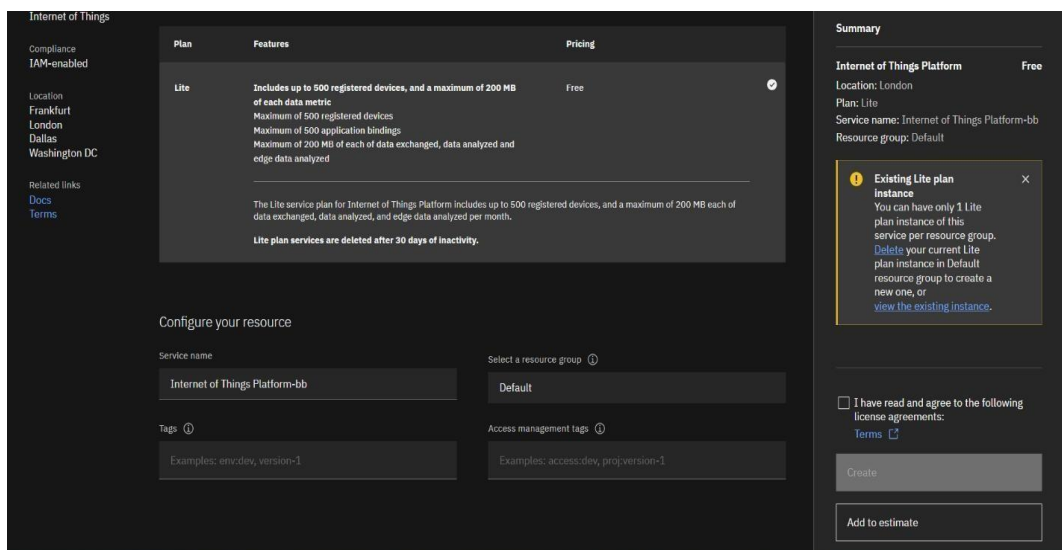
3. Click on the catalog on the top



4. Click on IoT in the category mentioned



5. If already a lite is present delete it else u can't create another



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6. Enter the location and in the configure your resource type the service name and choose the plan, tick the agree with agreements and then click on create

Internet of Things Platform

This service is the hub of all things IBM IoT, it is where you can set up and manage your connected devices so that your apps can access their live and historical data.

Create About

Type: Service

Provider: IBM

Updated on: 08/15/2022

Category: Internet of Things

Compliance: IAM-enabled

Location: Frankfurt, London, Dallas, Washington DC

Related links: Docs, Terms

Select a location: Dallas (us-south)

Select a pricing plan: Lite

Plan: Lite

Features: Includes up to 500 registered devices, and a maximum of 200 MB of each data metric. Maximum of 500 registered devices. Maximum of 500 application bindings. Maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed.

Pricing: Free

The Lite service plan for Internet of Things Platform includes up to 500 registered devices, and a maximum of 200 MB each of data exchanged, data analyzed, and edge data analyzed per month.

Summary:

Internet of Things Platform Free

Location: Dallas

Plan: Lite

Service name: Internet of Things Platform-2w

Resource group: Default

Existing Lite plan instance: You can have only 1 Lite plan instance of this service per resource group. Delete your current Lite plan instance in Default resource group to create a new one, or view the existing instance.

I have read and agree to the following license agreements: Terms

Create

Add to estimate

7. click create

Internet of Things

Compliance: IAM-enabled

Location: Frankfurt, London, Dallas, Washington DC

Related links: Docs, Terms

Plan: Lite

Features: Includes up to 500 registered devices, and a maximum of 200 MB of each data metric. Maximum of 500 registered devices. Maximum of 500 application bindings. Maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed.

Pricing: Free

The Lite service plan for Internet of Things Platform includes up to 500 registered devices, and a maximum of 200 MB each of data exchanged, data analyzed, and edge data analyzed per month.

Lite plan services are deleted after 30 days of inactivity.

Configure your resource

Service name: Internet of Things Platform-child_safety

Select a resource group: Default

Tags: Examples: env:dev, version:1

Access management tags: Examples: access:dev, proj:version-1

Summary:

Internet of Things Platform Free

Location: London

Plan: Lite

Service name: Internet of Things Platform-child_safety

Resource group: Default

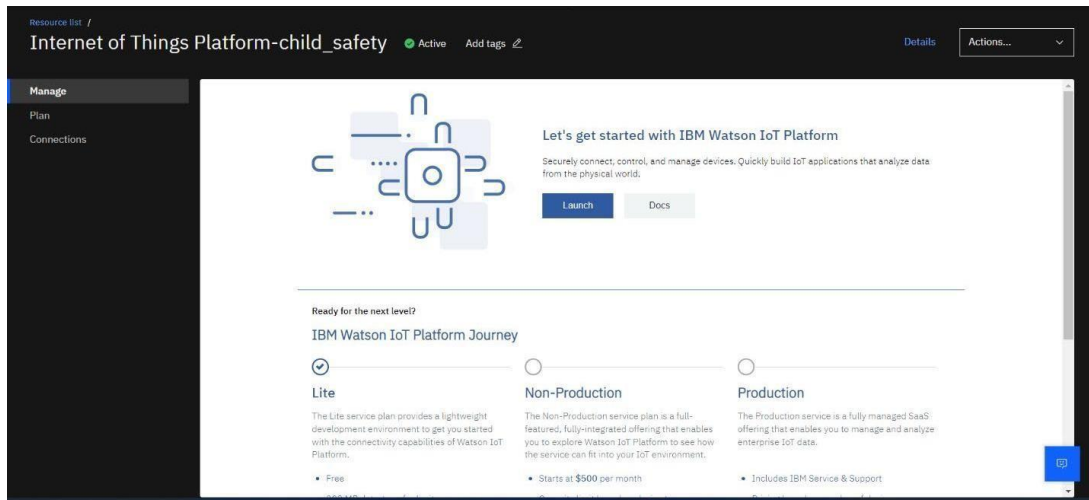
I have read and agree to the following license agreements: Terms

Create

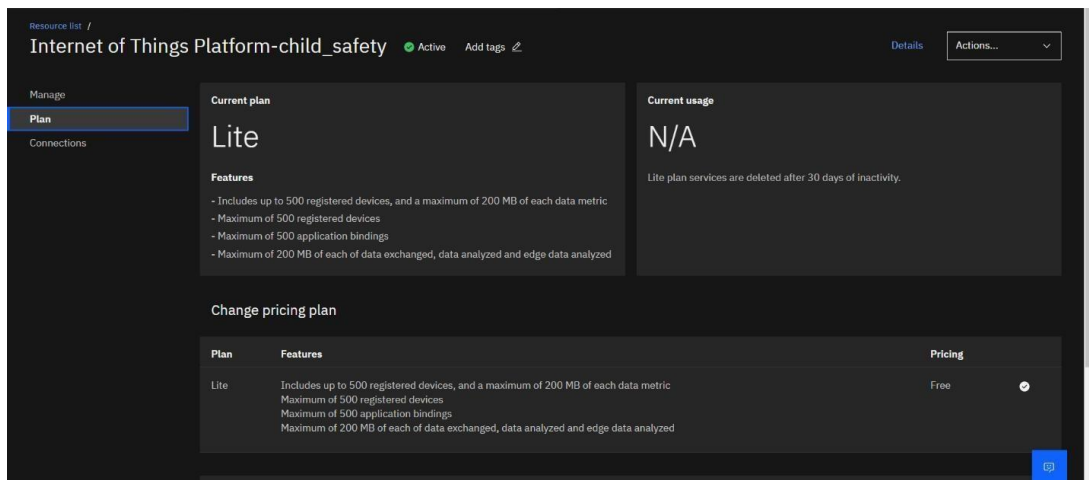
Add to estimate

8. Internet of Things Platform Child_safety will be created, where there are different options like manage, plan, and connection

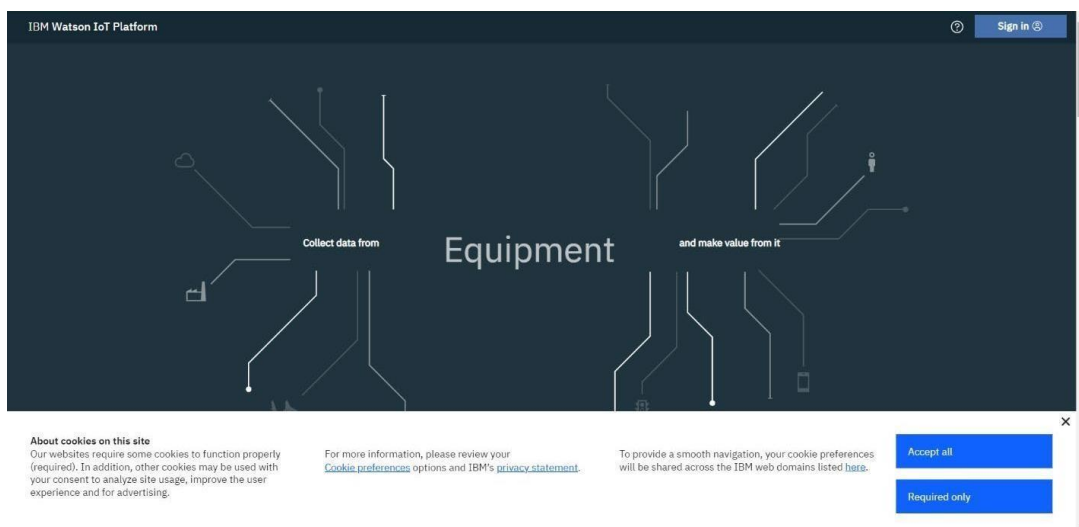
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9. manage is for launch, plan gives us the idea about the payment package and its upgrades, and lastly the connection is for to connect IOT with other services

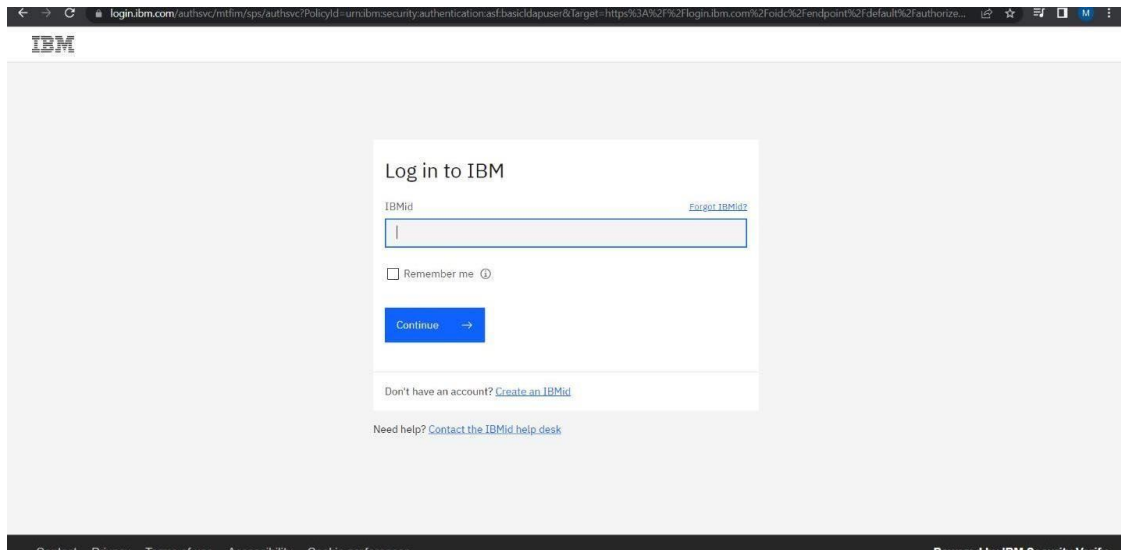


10. Click on the launch button in the manage tab, it will open to this



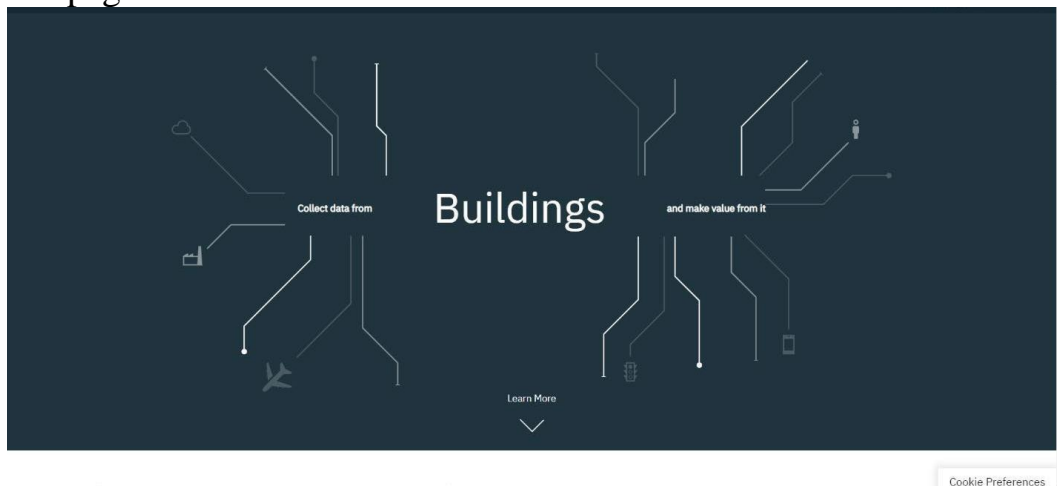
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11. Enter the details to sign in to the Watson Cloud to create a device



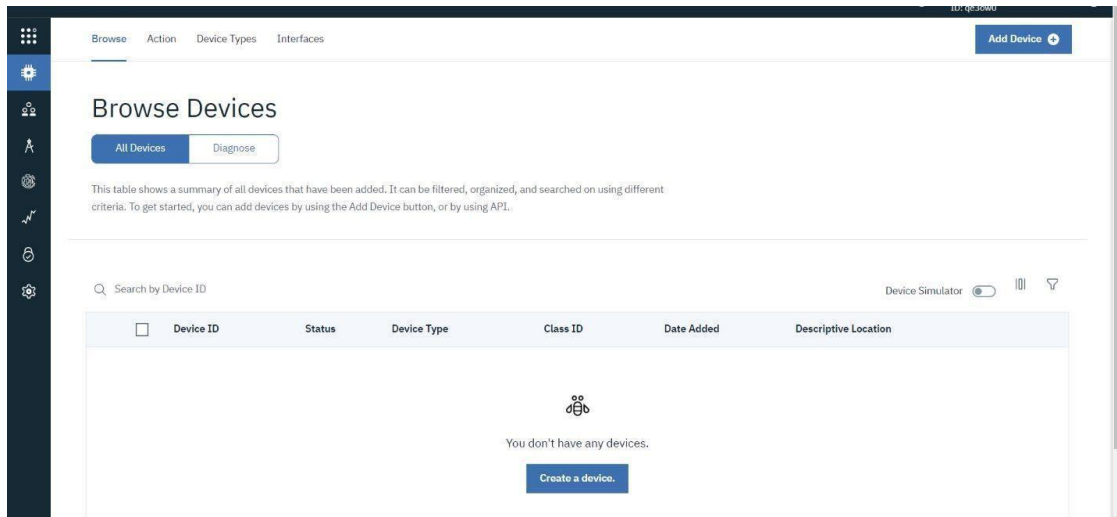
The screenshot shows the IBM login page in a web browser. The browser's address bar displays a URL starting with 'login.ibm.com'. The page features the IBM logo in the top left corner. The main content area is a light gray rectangle containing a white login form. The form is titled 'Log in to IBM' and includes an 'IBMId' input field with a 'Forgot IBMId?' link to its right. Below the input field is a checkbox labeled 'Remember me' with a help icon. A blue 'Continue' button with a right-pointing arrow is positioned below the checkbox. At the bottom of the form, there is a link for 'Don't have an account? Create an IBMId' and a link for 'Need help? Contact the IBMId help desk'.

12. Once logged in the name will be displayed and it goes back to the firstpage

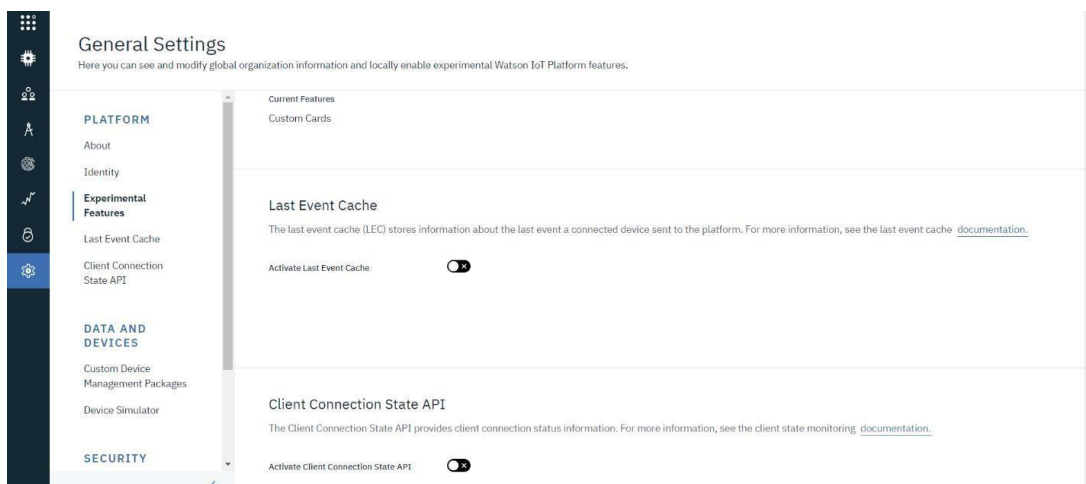


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13. And again clicking on the launch button will open this tab, the device will help in the creation of the devices, the addition of devices, and the display of details of the devices.

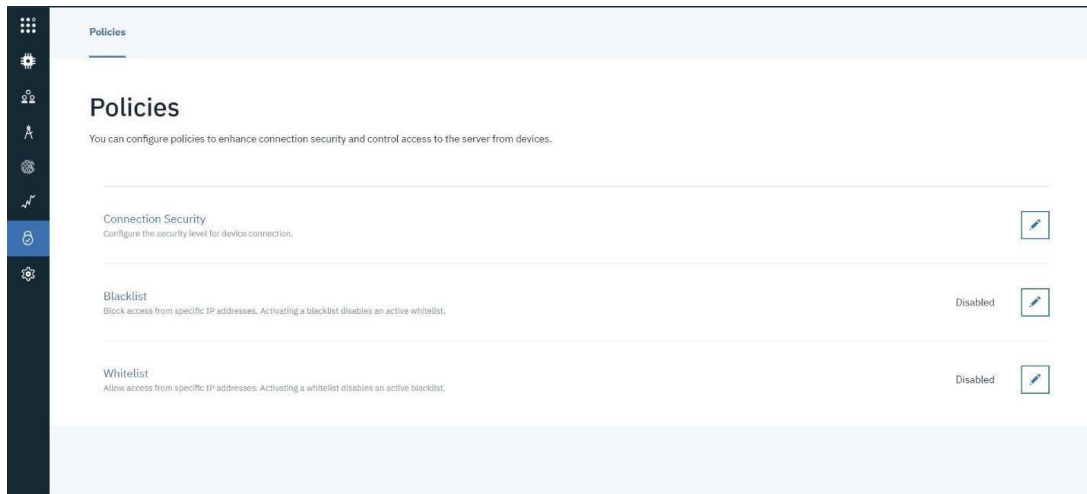


14. The setting tab is used to change the general setting if needed for the project.

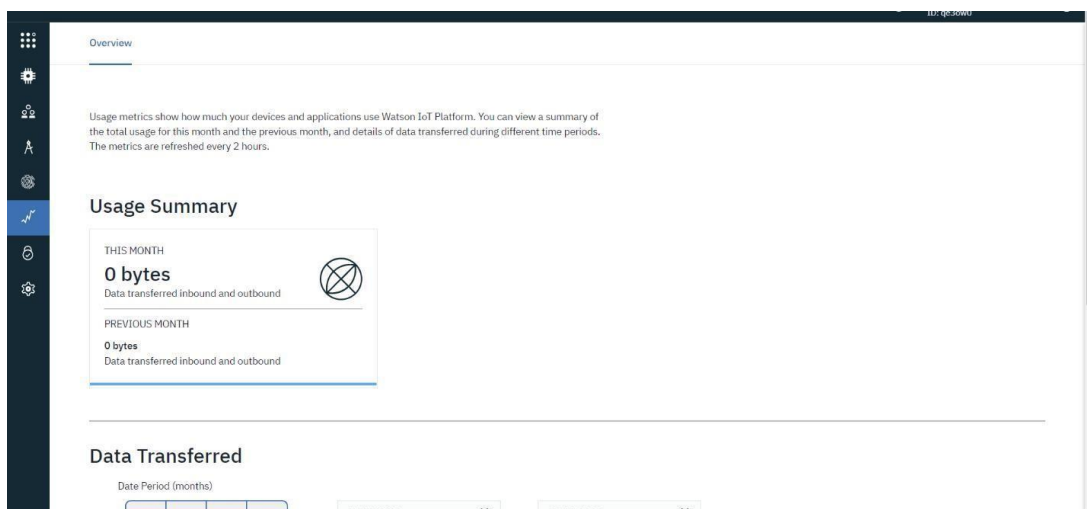


15. In the security tab we can choose the type of security connection and can change according to specification

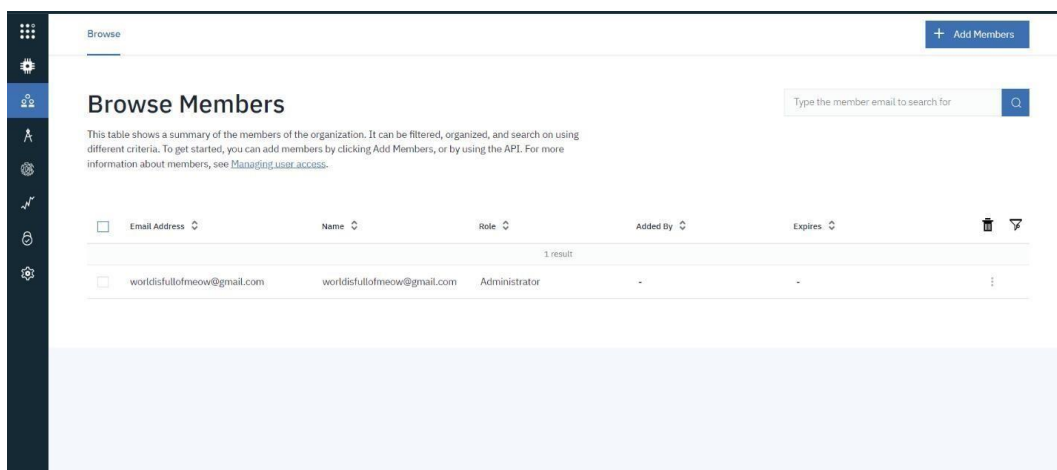
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16. Usage gives the summary of how many bytes are used between the devices and the IBM cloud

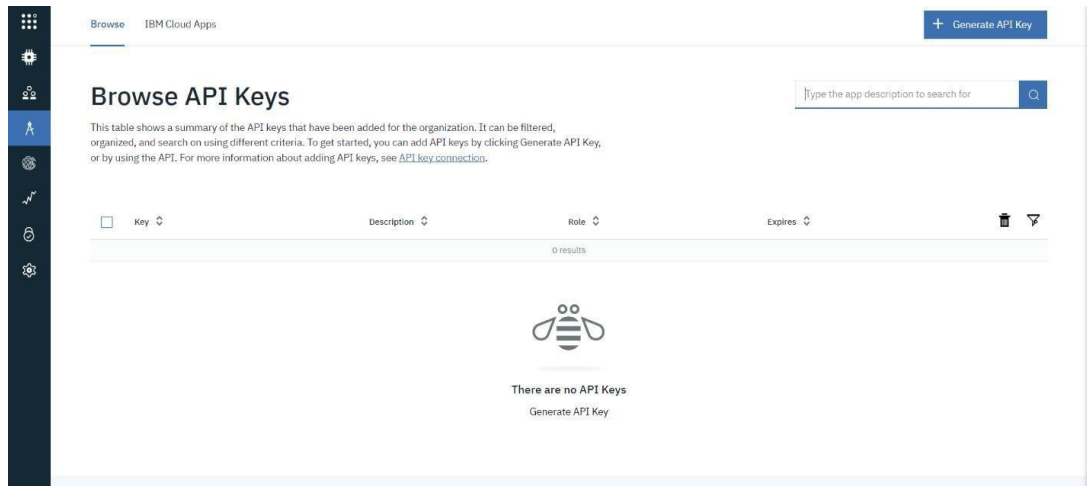


17. The member tab is add the teams members to work in the platform

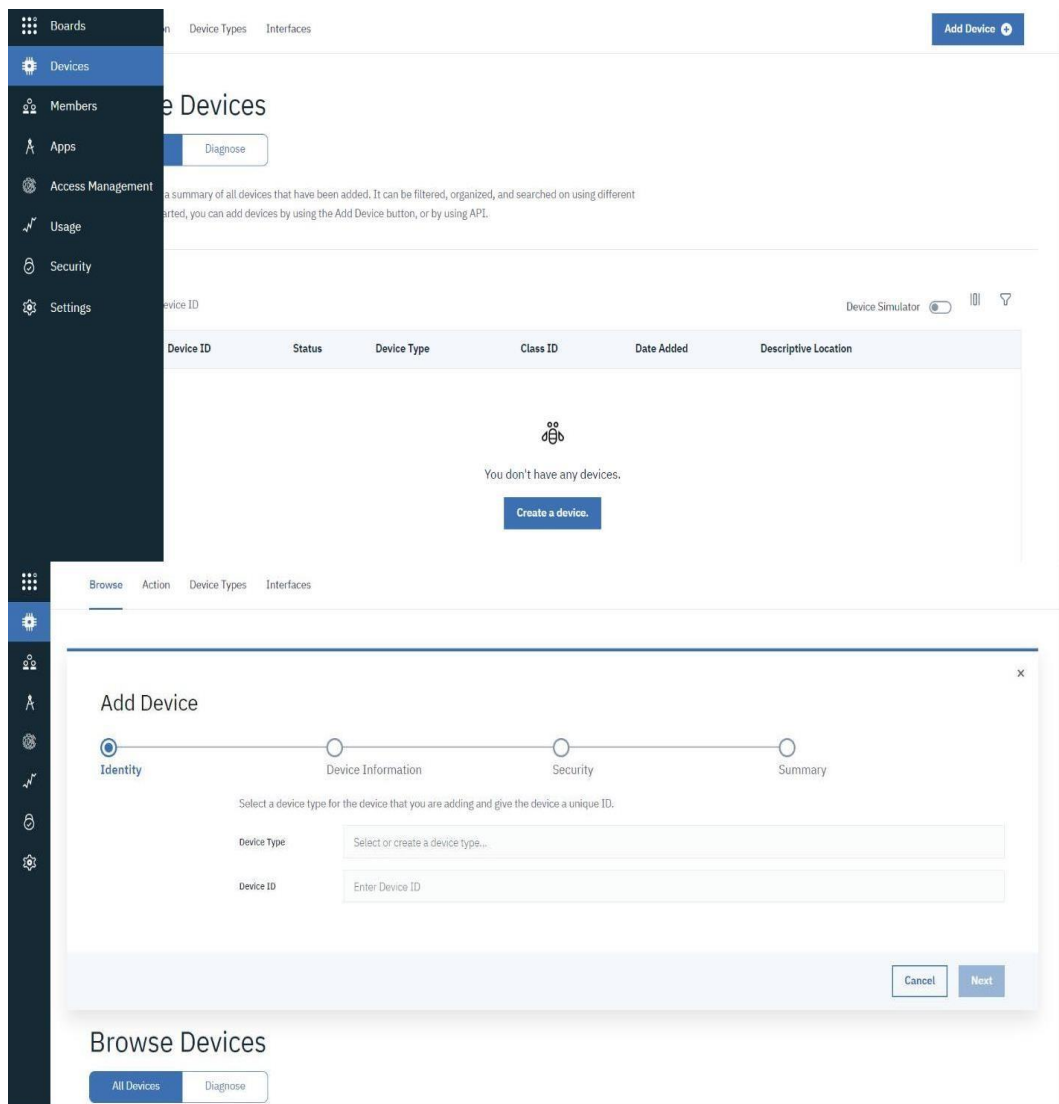


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18. This tab is used when you want to connect to some other platform and to integrate with other services.



19. Click on the device tab and click on the add device button, then give the device type and device id and click next



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20. This page to enter extra details and of the hardware

The screenshot shows the 'Add Device' wizard at the 'Device Information' step. The progress bar indicates that 'Identity' is complete and 'Device Information' is the current step. The page contains several input fields for device details:

- Serial Number: Enter Serial Number
- Model: Enter Model
- Description: Enter Description
- Hardware Version: Enter Hardware Version
- Manufacturer: Enter Manufacturer
- Device Class: Enter Device Class
- Firmware Version: Enter Firmware Version
- Descriptive Location: Enter Descriptive Location

There is an 'Add Metadata' button with a plus icon. At the bottom right, there are 'Back' and 'Next' buttons.

21. Clicking next it goes to the security where we do authentication token id.

The screenshot shows the 'Add Device' wizard at the 'Security' step. The progress bar shows 'Identity' and 'Device Information' as completed steps. The page provides instructions for selecting an authentication token:

- Auto-generated authentication token (default):** Allow the service to generate an authentication token for you. Tokens are 18 characters and contain a mix of alphanumeric characters and symbols. The token is returned to you at the end of the device registration process.
- Self-provided authentication token:** Provide your own authentication token for this device. The token must be between 8 and 36 characters and contain a mix of lowercase and uppercase letters, numbers, and symbols, which can include hyphens, underscores, and periods. Do not use repeated characters, dictionary words, user names, or other predefined sequences.

An 'Authentication Token' field displays the value '1997199520012005'. Below the field, a note states: 'Make a note of the generated token. Lost authentication tokens cannot be recovered. Tokens are encrypted before being stored. Authentication tokens are encrypted before we store them.'

22. Clicking on next it goes to the summary of the device then click finish

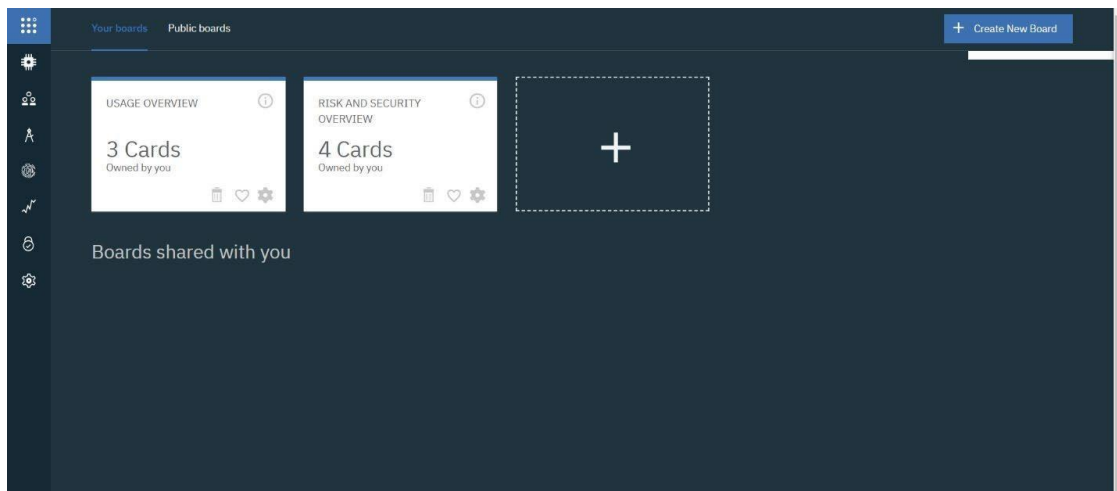
The screenshot shows the 'Add Device' wizard at the 'Summary' step. The progress bar shows all previous steps ('Identity', 'Device Information', 'Security') as completed. The page displays a summary of the device information:

- Device Type: NodeMCU
- Device ID: 199795
- Security Token: 1997199520012005

There is a 'View Metadata' button. At the bottom right, there are 'Back' and 'Finish' buttons.

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23. The device credentials will be displayed with all the details
24. Safe the details of the device as the authentication tokens are nonrecoverable and if misplaced then we have to create a new one.
- 25..Clicking on the device tab we can now see the added device. Clicking on it will display the other details. It has different tabs like Identity, Device Information, State and login.
In a similar way, we can create n number of devices with a 50 per page limit as per the requirement of our project
26. The Boards will display card for the project.



CONCLUSION:

An IBM Watson cloud for IoT and a device is created

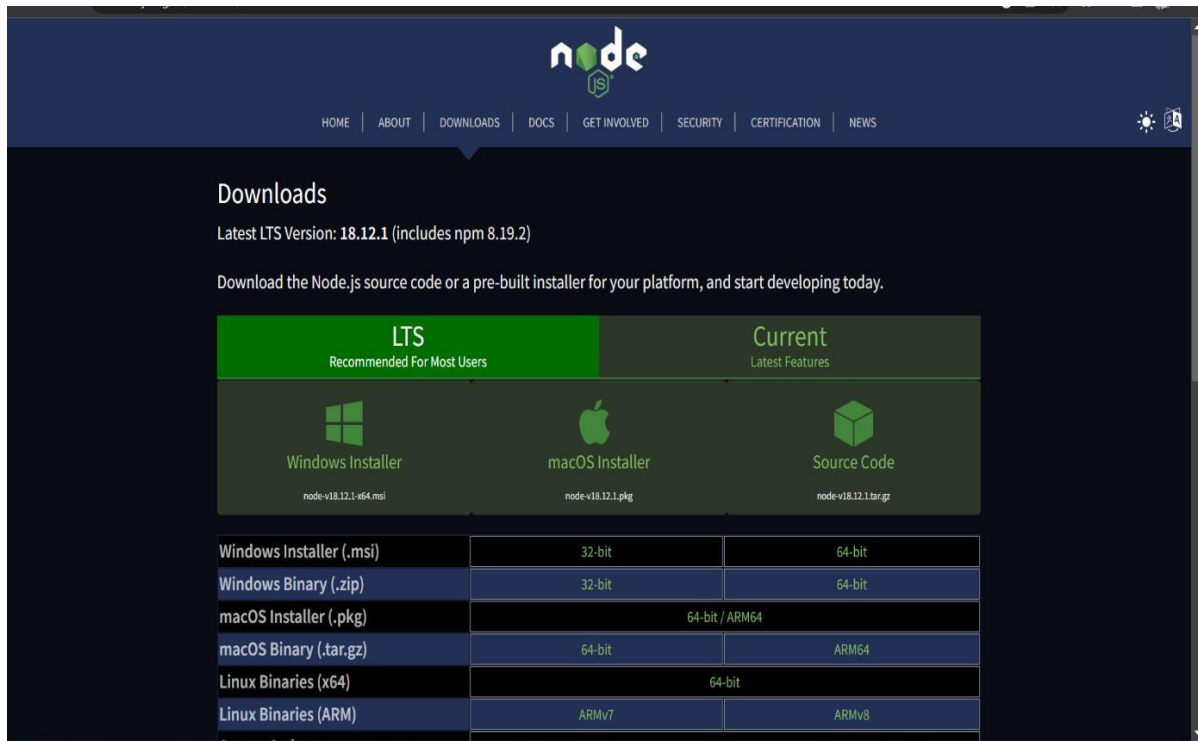
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Create Node-RED Service

Aim: To create a web application create a Node-RED service.


Steps followed:

- **Download Node JS for your pc:**



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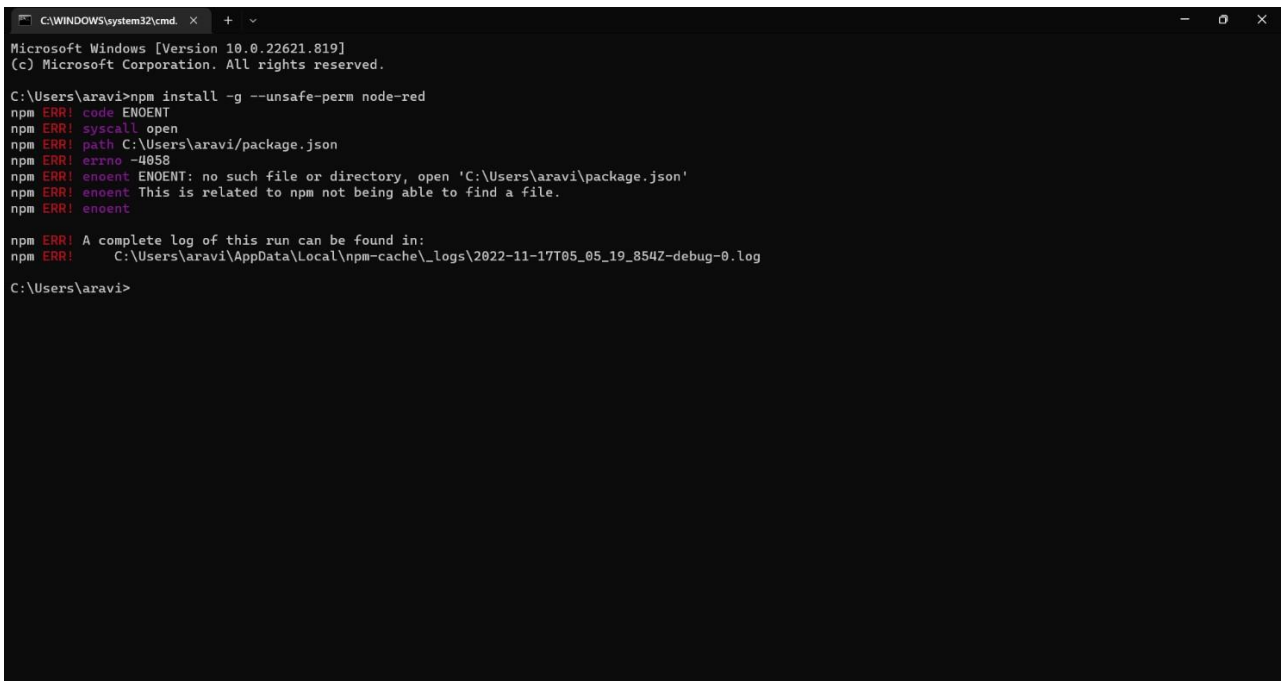
Run the command prompt in your pc:



```
C:\WINDOWS\system32\cmd. x + v
Microsoft Windows [Version 10.0.22621.819]
(c) Microsoft Corporation. All rights reserved.

C:\Users\aravi>
```

To install Node-Red type “**npm install -g --unsafe-perm node-red**” in cmd :



```
C:\WINDOWS\system32\cmd. x + v
Microsoft Windows [Version 10.0.22621.819]
(c) Microsoft Corporation. All rights reserved.

C:\Users\aravi>npm install -g --unsafe-perm node-red
npm ERR! code ENOENT
npm ERR! syscall open
npm ERR! path C:\Users\aravi\package.json
npm ERR! errno -4058
npm ERR! enoent ENOENT: no such file or directory, open 'C:\Users\aravi\package.json'
npm ERR! enoent This is related to npm not being able to find a file.
npm ERR! enoent

npm ERR! A complete log of this run can be found in:
npm ERR!     C:\Users\aravi\AppData\Local\npm-cache\_logs\2022-11-17T05_05_19_854Z-debug-0.log

C:\Users\aravi>
```


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After installation type “node-red” in cmd to run Node-Red :

```
node-red
(c) Microsoft Corporation. All rights reserved.

C:\Users\aravi>node-red
17 Nov 10:37:18 - [info]

Welcome to Node-RED
=====

17 Nov 10:37:18 - [info] Node-RED version: v3.0.2
17 Nov 10:37:18 - [info] Node.js version: v18.12.0
17 Nov 10:37:18 - [info] Windows_NT 10.0.22621 x64 LE
17 Nov 10:37:19 - [info] Loading palette nodes
17 Nov 10:37:21 - [info] Worldmap version 2.30.3
17 Nov 10:37:21 - [info] Dashboard version 3.2.0 started at /ui
17 Nov 10:37:21 - [info] Settings file : C:\Users\aravi\.node-red\settings.js
17 Nov 10:37:21 - [info] Context store : 'default' [module=memory]
17 Nov 10:37:21 - [info] User directory : \Users\aravi\.node-red
17 Nov 10:37:21 - [warn] Projects disabled : editorTheme.projects.enabled=false
17 Nov 10:37:21 - [info] Flows file : \Users\aravi\.node-red\flows.json
17 Nov 10:37:21 - [info] Server now running at http://127.0.0.1:1880/
17 Nov 10:37:21 - [warn]

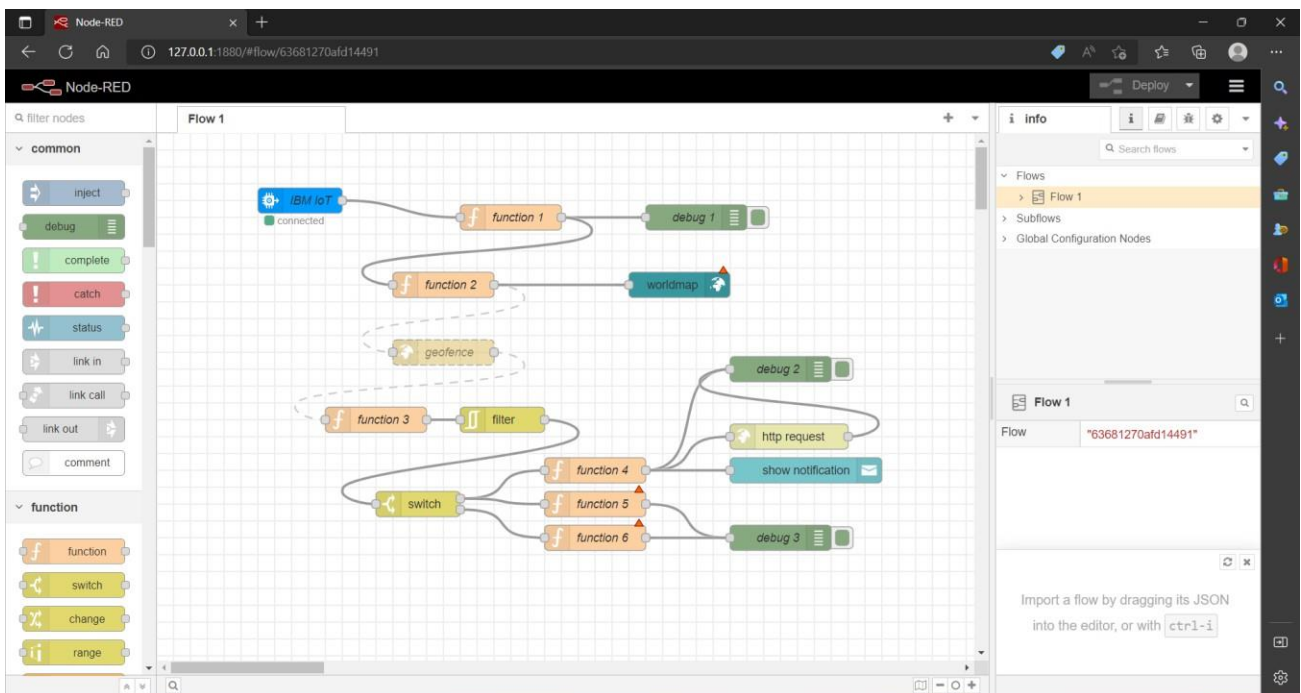
-----
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----

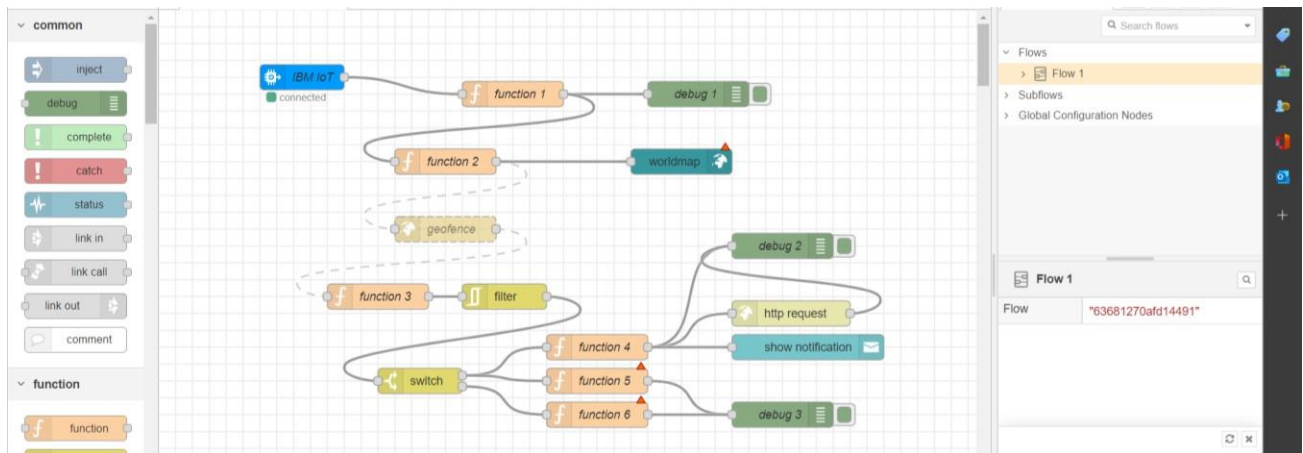
17 Nov 10:37:21 - [info] Starting flows
17 Nov 10:37:21 - [info] [ui_worldmap:35a1bec6be25dc6c] started at /worldmap
17 Nov 10:37:21 - [info] Started flows
17 Nov 10:37:21 - [error] [function:function 5] SyntaxError: Unexpected identifier (body:line 1)
17 Nov 10:37:21 - [error] [function:function 6] SyntaxError: Unexpected identifier (body:line 1)
```

Copy the link and paste it in your Browser to run the Node-red in local server:

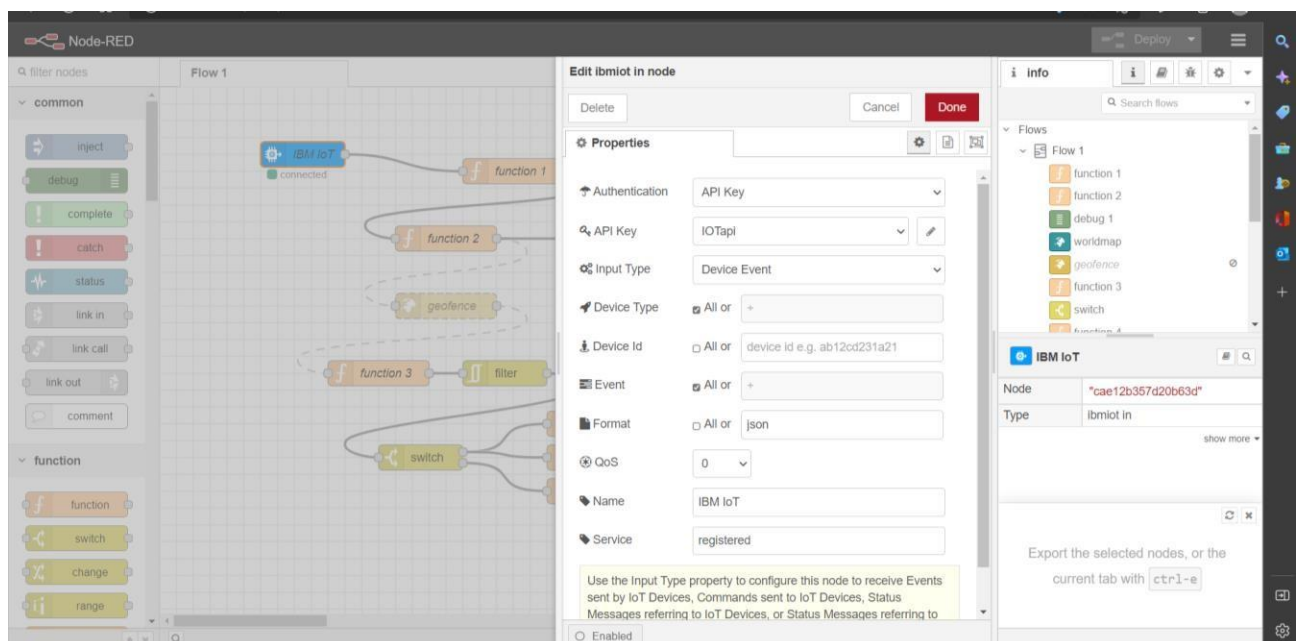


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Dragged and dropped components into the editor



Editing some values of the properties:



Result: Successfully created a NodeRED service on IBM Cloud