

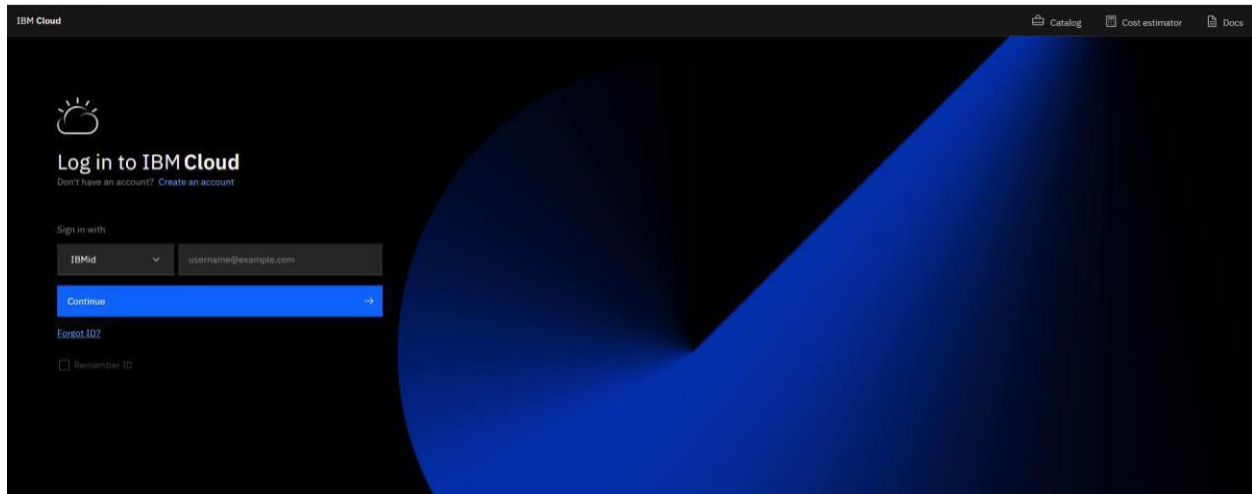
CREATE IBM WATSON IOT PLATFORM AND DEVICE

AIM:

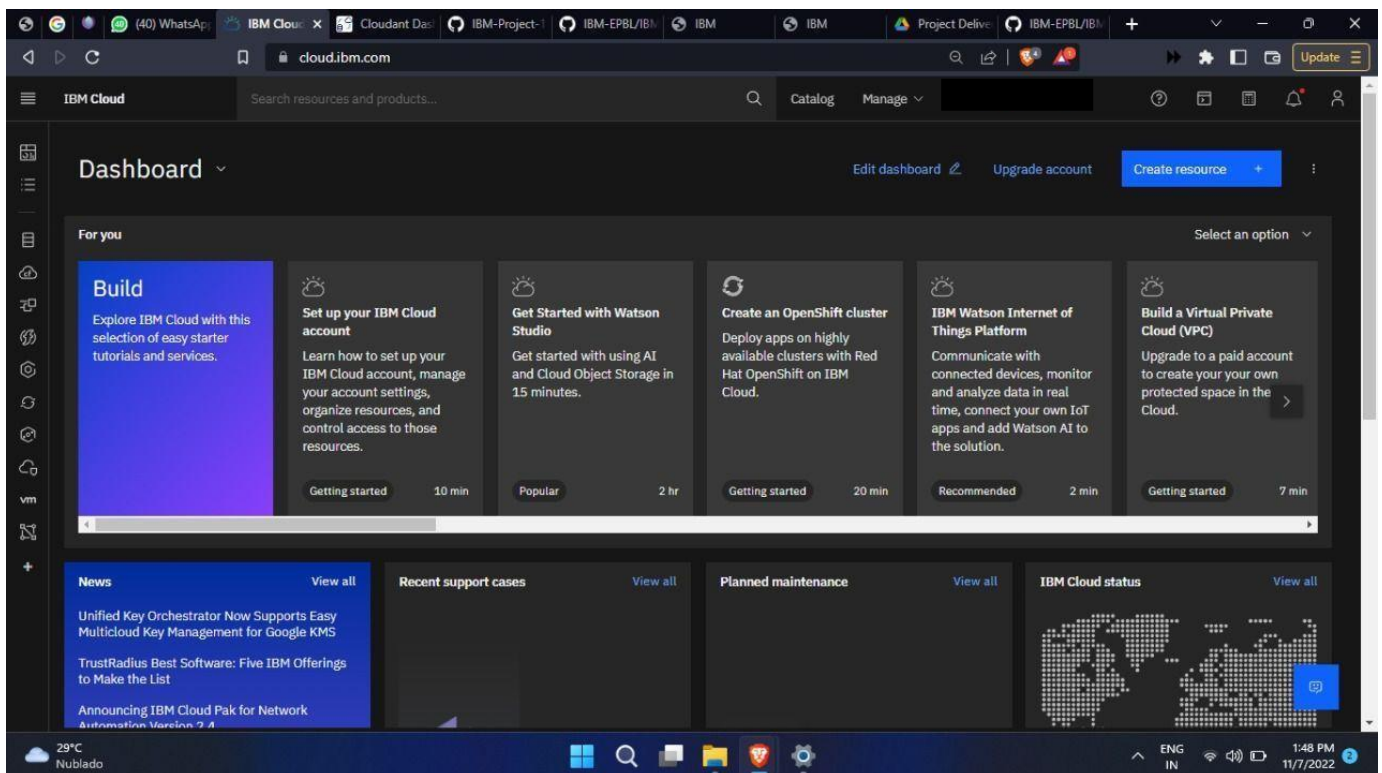
To create the IBM Watson IoT platform and device

STEPS:

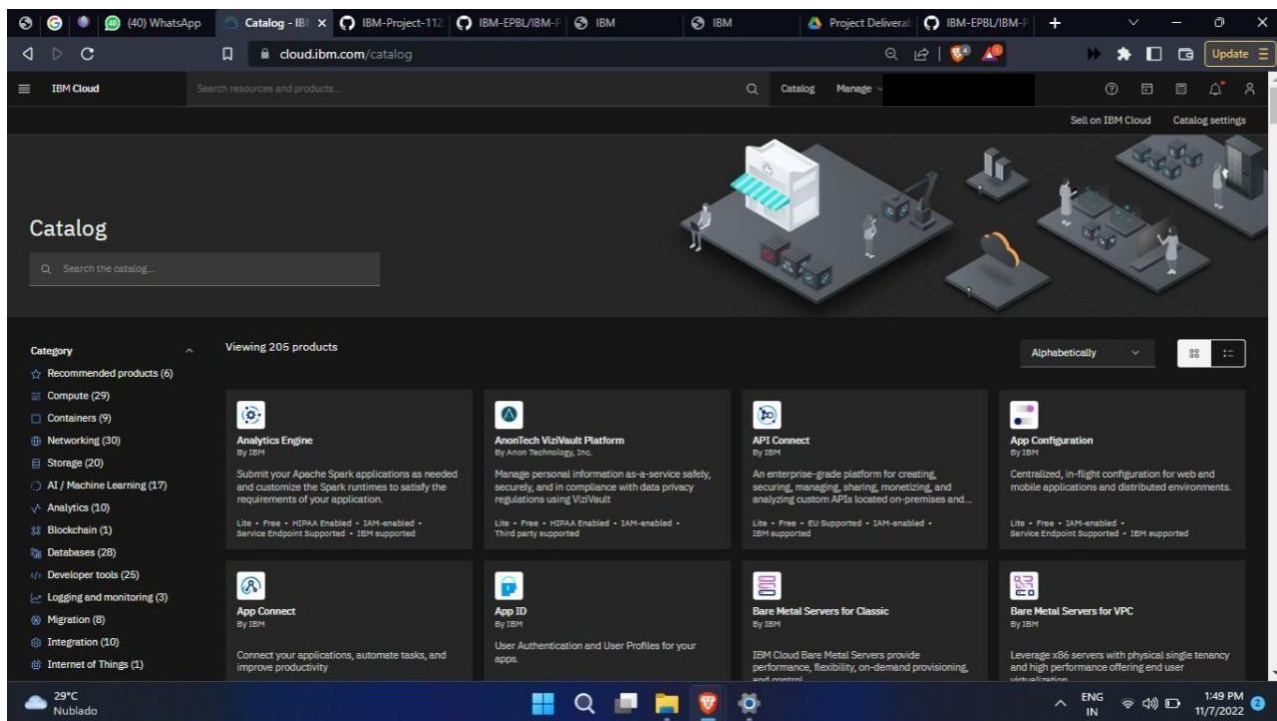
1. Firstly create an IBM cloud account with IBMid and password.



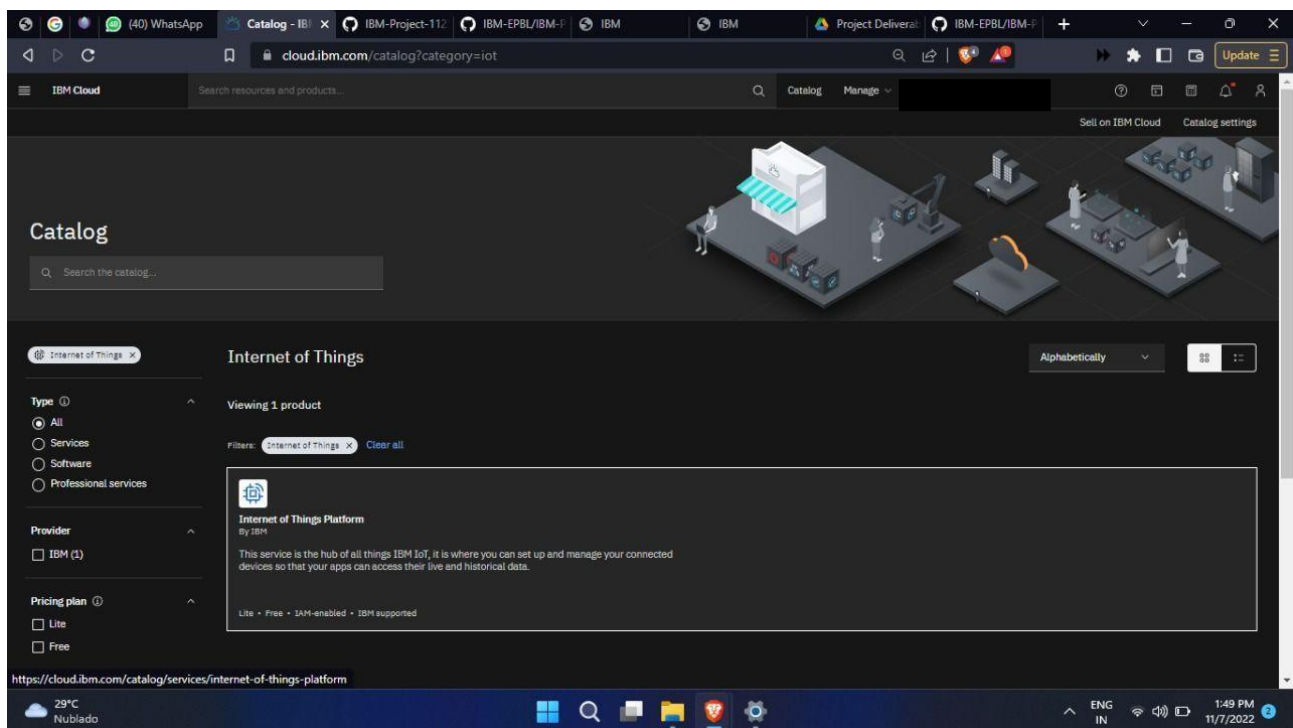
2. Home page of IBM cloud.



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.

The screenshot shows the IBM Cloud console for creating a new Internet of Things Platform service. The page is titled "Internet of Things Platform" and includes a description: "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." The "Create" tab is active, and the "About" tab is also visible. The "Select a location" dropdown is set to "Frankfurt (eu-de)". The "Select a pricing plan" section shows a table with two plans: "Lite" and "Free". The "Lite" plan is selected, and its details are shown in a modal. The "Lite" plan includes up to 500 registered devices, a maximum of 200 MB of each data metric, a maximum of 500 application bindings, and a maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed. The "Free" plan is also listed. The "Summary" section on the right shows the service name "Internet of Things Platform-60" and the resource group "Default". The "Create" button is visible at the bottom right.

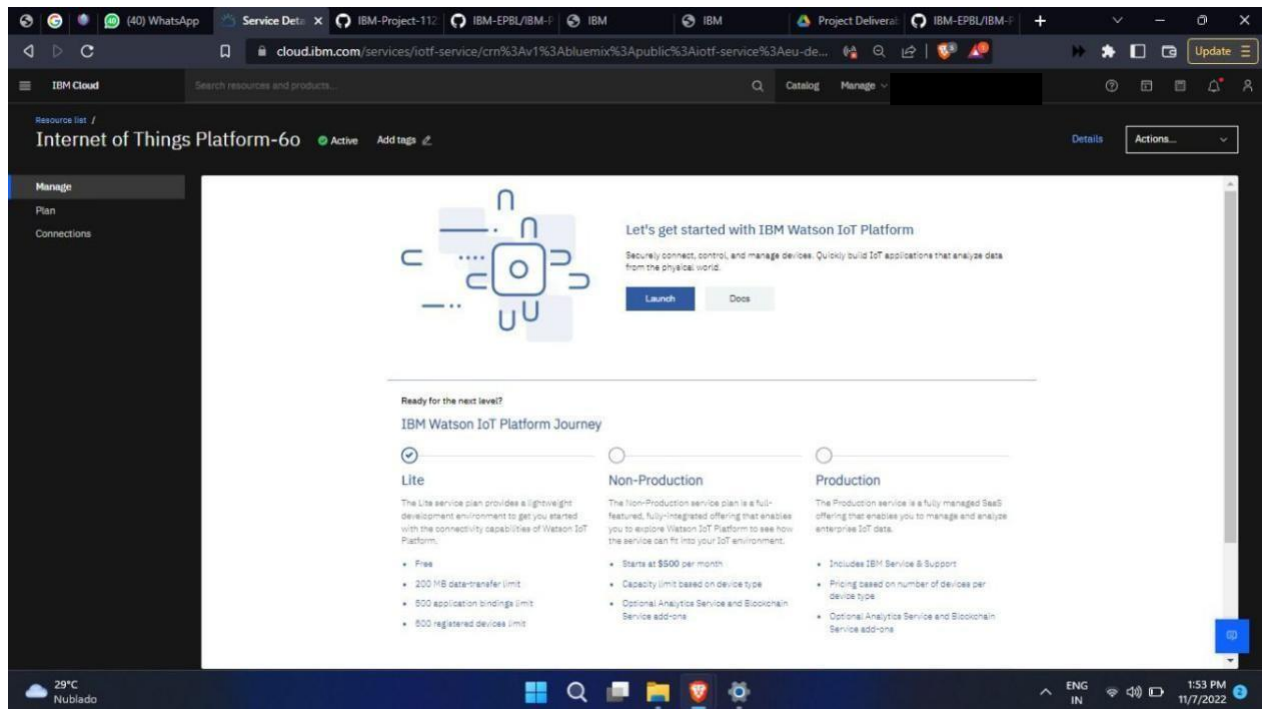
Plan	Features	Pricing
Lite	Includes up to 500 registered devices, and a maximum of 200 MB of each data metric Maximum of 500 registered devices Maximum of 500 application bindings Maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed	Free
Free		

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.

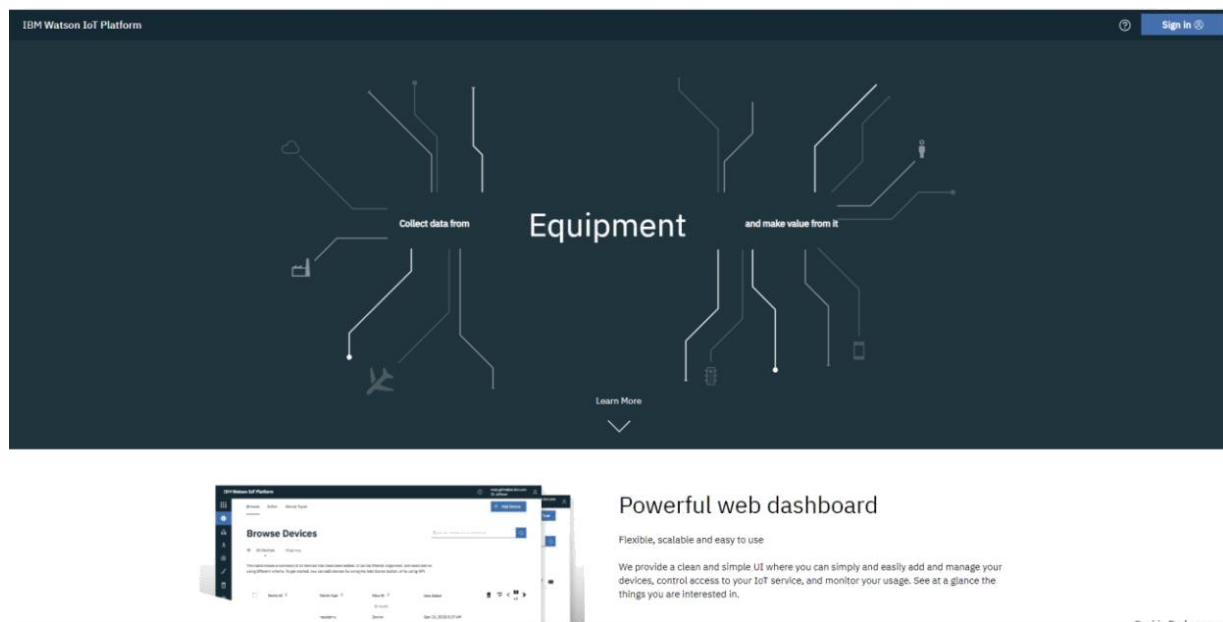
The screenshot shows the IBM Cloud console for the "Internet of Things Platform-60" resource. The resource is in the "Active" state. The "Manage" tab is active, and the "Plan" and "Connections" tabs are also visible. The "Ready for the next level?" section shows the "IBM Watson IoT Platform Journey" with three stages: "Lite", "Non-Production", and "Production". The "Lite" stage is selected, and its details are shown in a modal. The "Lite" stage includes up to 500 registered devices, a maximum of 200 MB of each data metric, a maximum of 500 application bindings, and a maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed. The "Non-Production" stage includes up to 500 registered devices, a maximum of 200 MB of each data metric, a maximum of 500 application bindings, and a maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed. The "Production" stage includes up to 500 registered devices, a maximum of 200 MB of each data metric, a maximum of 500 application bindings, and a maximum of 200 MB of each of data exchanged, data analyzed and edge data analyzed.

Stage	Details
Lite	The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform. • Free • 200 MB data transfer limit • 500 application bindings limit • 500 registered devices limit
Non-Production	The Non-Production service plan is a full-featured, fully-integrated offering that enables you to explore Watson IoT Platform to see how the service can fit into your IoT environment. • Starts at \$500 per month • Capacity limit based on device type • Optional Analytics Service and Blockchain Service add-ons
Production	The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data. • Includes IBM Service & Support • Pricing based on number of devices per device type • Optional Analytics Service and Blockchain Service add-ons

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



8. Clicking on the launch button in the manage tab, it will open to this.



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

IBM

Log in to IBM

IBMid [Forgot IBMid?](#)

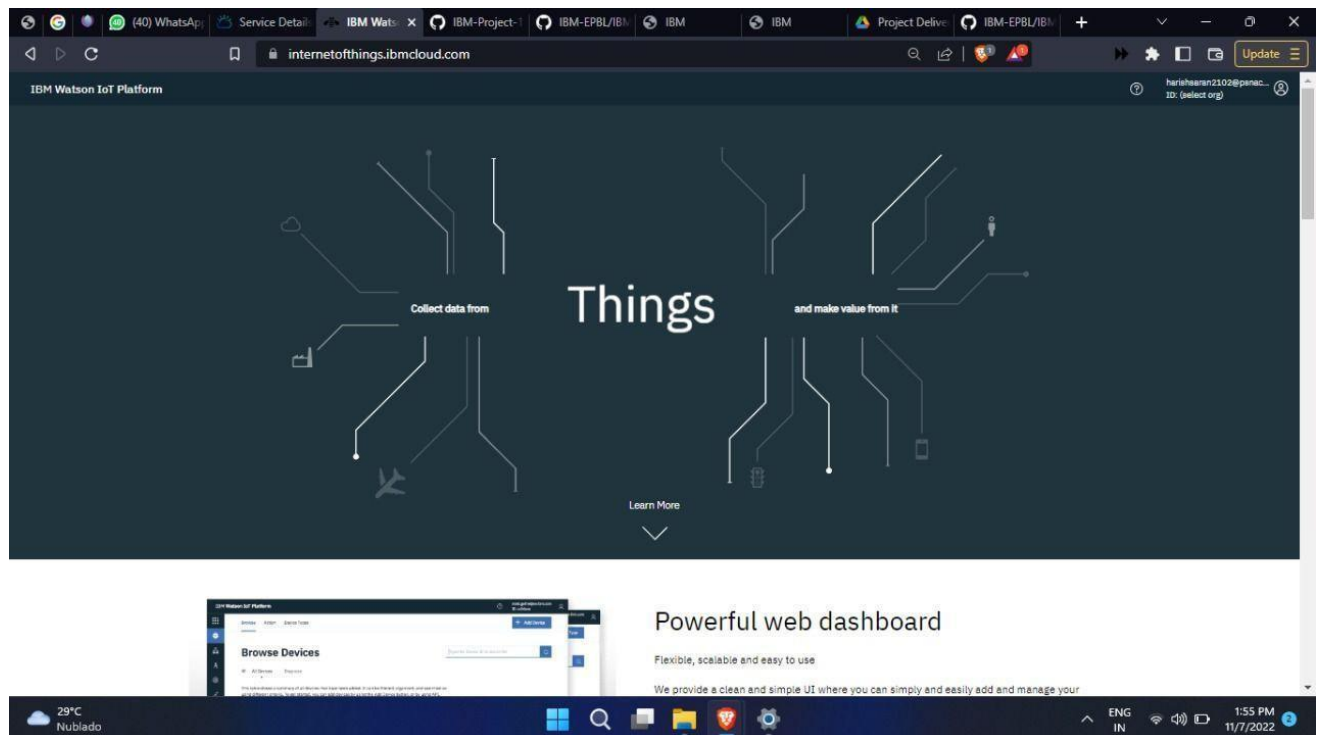
☐ Remember me ⓘ

Continue →

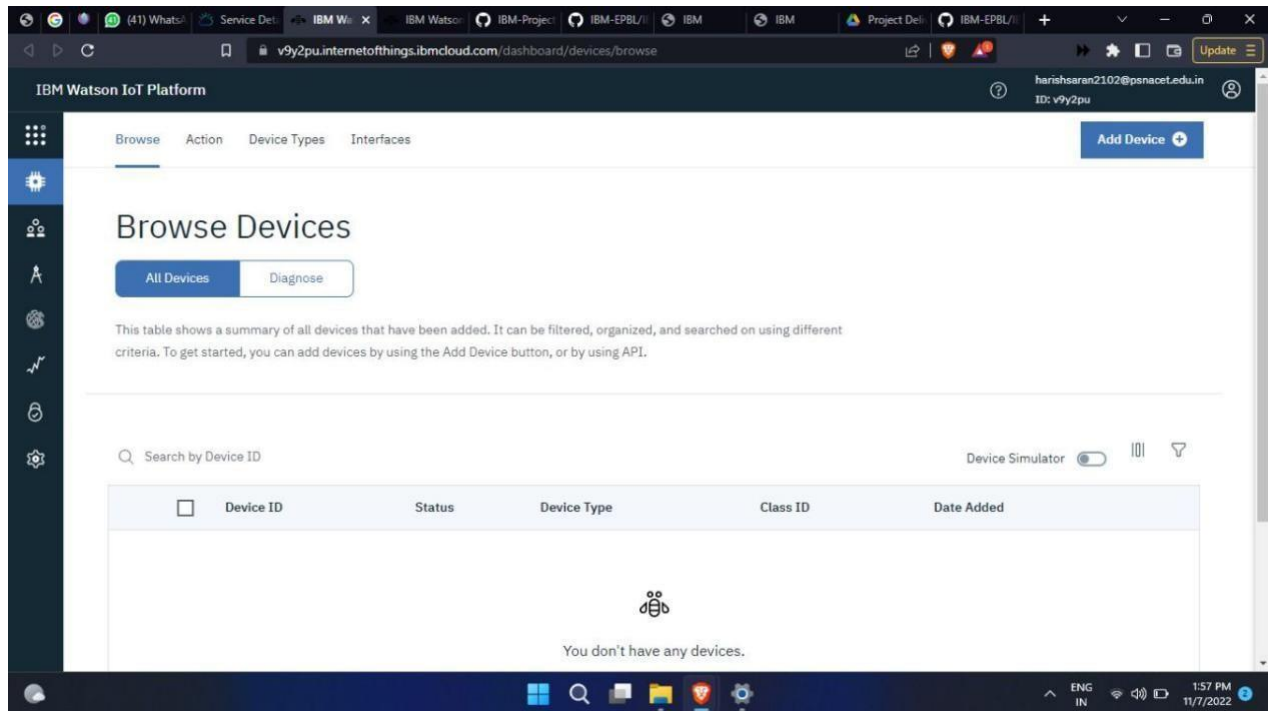
Don't have an account? [Create an IBMid](#)

Need help? [Contact the IBMid help desk](#)

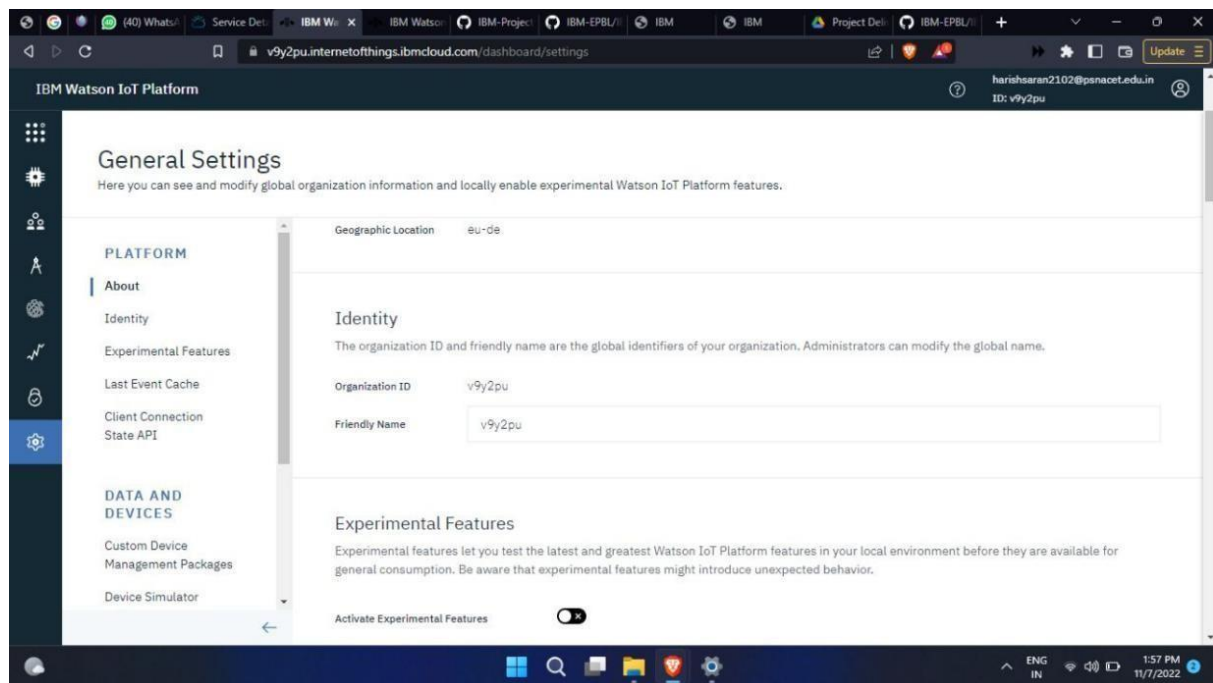
10. Once logged in the name will be displayed and it goes back to the first page.



11. 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.



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



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

The screenshot shows the 'Policies' section of the IBM Watson IoT Platform. The page title is 'Policies' with a subtitle: 'You can configure policies to enhance connection security and control access to the server from devices.' There are three policy cards: 'Connection Security' (Configure the security level for device connection.), 'Blacklist' (Block access from specific IP addresses. Activating a blacklist disables an active whitelist.), and 'Whitelist' (Allow access from specific IP addresses. Activating a whitelist disables an active blacklist.). Each card has a 'Disabled' status and an edit icon. The left sidebar contains navigation icons for various platform features. The top navigation bar shows the user's email 'harishsaran2102@psnacet.edu.in' and ID 'v9y2pu'. The bottom status bar shows the time '1:58 PM' and date '11/7/2022'.

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

The screenshot shows the 'Usage Summary' section of the IBM Watson IoT Platform. The page title is 'Usage Summary'. It displays two summary cards: 'THIS MONTH' and 'PREVIOUS MONTH', both showing '0 bytes' of data transferred inbound and outbound. Below these is a 'Data Transferred' section with a 'Date Period (months)' filter set to '1', and date range selectors for 'from' (06/11/2022) and 'to' (07/11/2022). The left sidebar and top navigation bar are consistent with the previous screenshot. The bottom status bar shows the time '1:58 PM' and date '11/7/2022'.

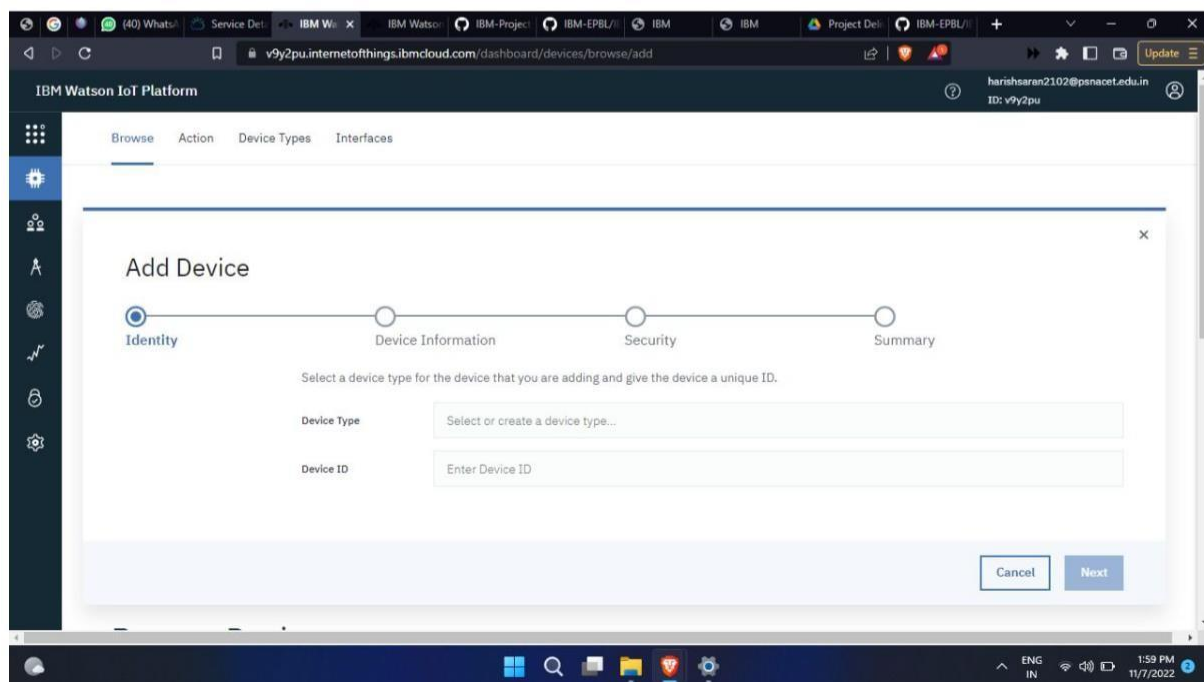
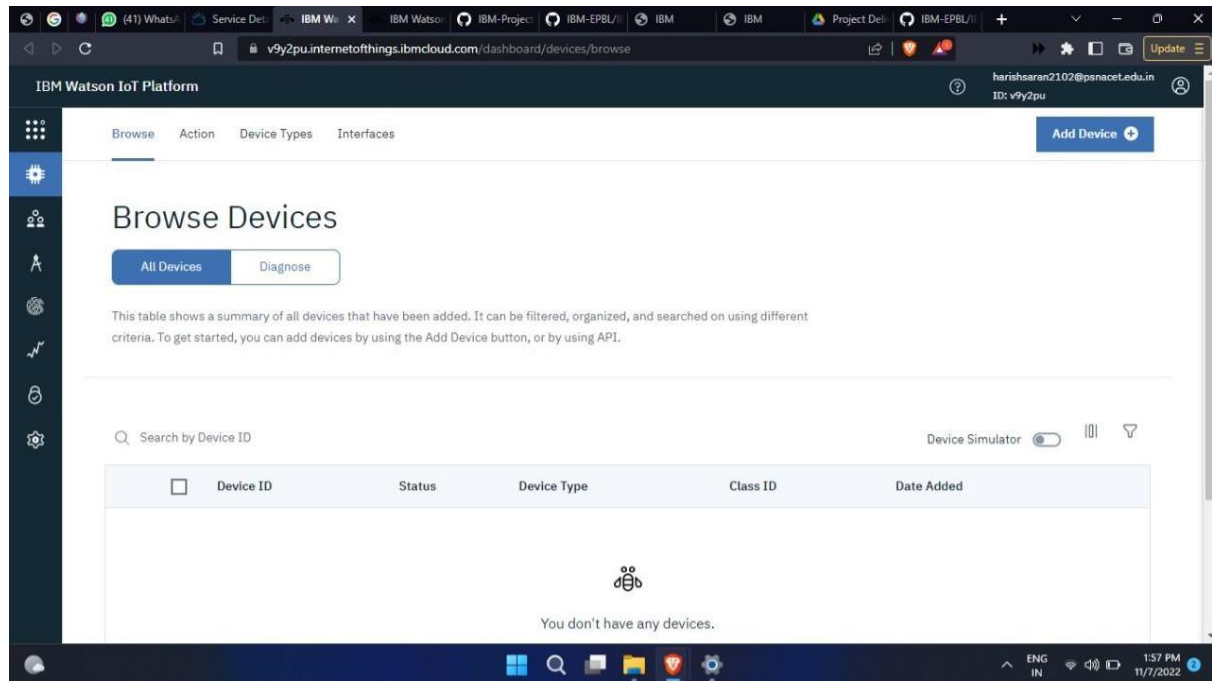
15. The member tab is add the teams members to work in the platform.

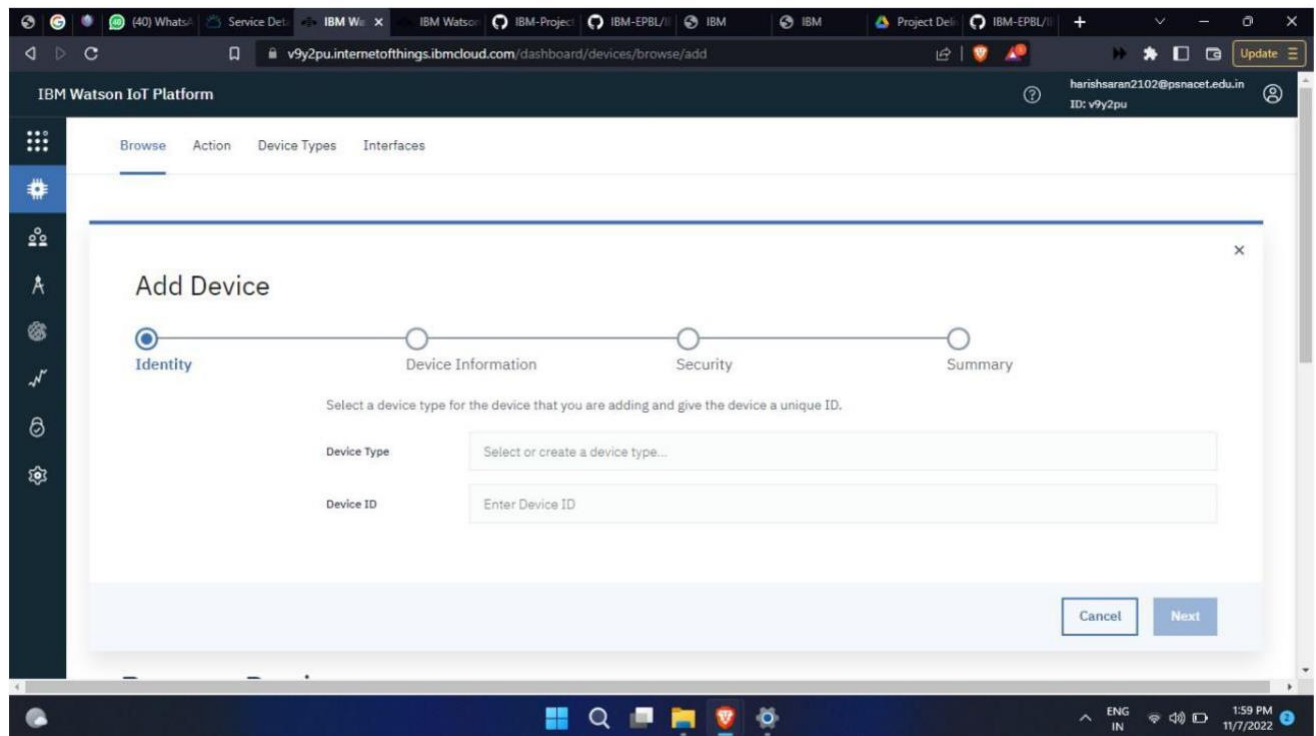
The screenshot displays the 'Browse Members' interface in the IBM Watson IoT Platform. The page title is 'Browse Members'. Below the title, there is a search bar with the placeholder text 'Type the member email to search for'. A table lists the members of the organization. The table has columns for 'Email Address', 'Name', 'Role', 'Added By', and 'Expires'. There is one member listed: harishsaran2102@psnacet.edu.in, harishsaran2102@psn..., Administrator. The page also includes an 'Add Members' button in the top right corner.

Email Address	Name	Role	Added By	Expires
harishsaran2102@psnacet.edu.in	harishsaran2102@psn...	Administrator	-	-

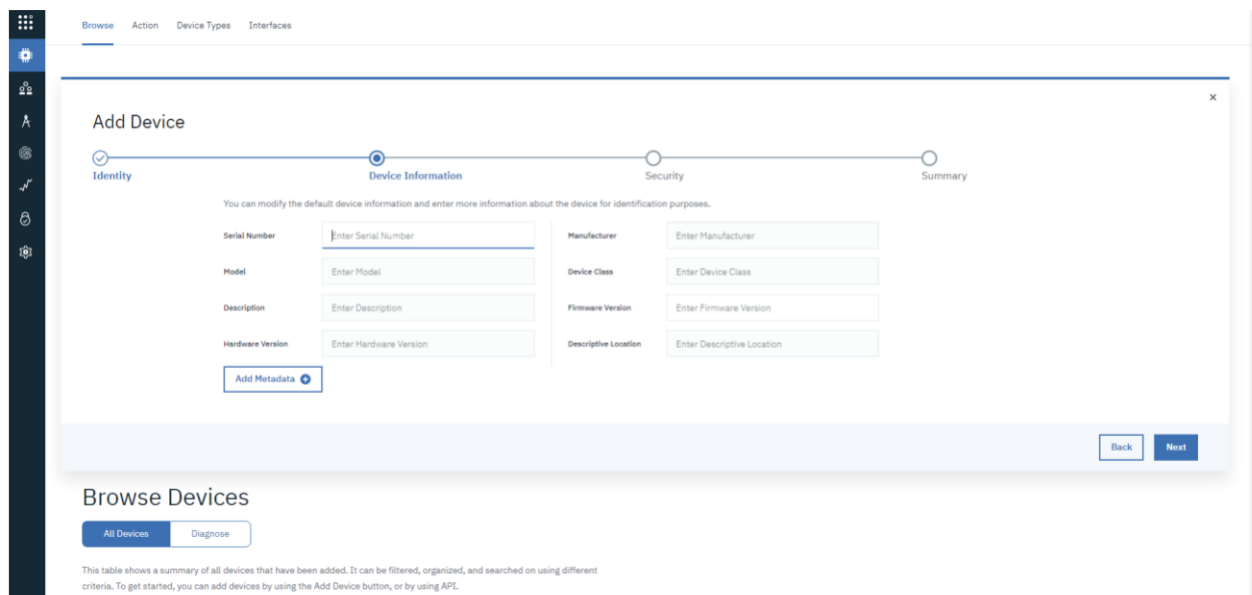
16. This tab is used when you want to connect to some other platform and to integrate with other services.

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





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



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

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform. The wizard has four steps: Identity, Device Information, Security, and Summary. The 'Security' step is currently active, indicated by a blue circle. The 'Identity' step is marked with a checkmark, and the 'Device Information' step is also marked with a checkmark. The 'Summary' step is marked with a circle. The 'Security' step contains two options for selecting a device authentication token: 'Auto-generated authentication token (default)' and 'Self-provided authentication token'. The 'Auto-generated authentication token' option is selected. Below the options, there is a text input field labeled 'Authentication token' with the placeholder text 'Enter an optional token'. Below the input field, there is a note: 'Make a note of the generated token. Lost authentication tokens cannot be recovered. Tokens are encrypted before being stored.' and a sub-note: 'Authentication token are encrypted before we store them.' At the bottom right of the wizard, there are 'Back' and 'Next' buttons. The 'Next' button is highlighted in blue.

Browse Devices

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

The screenshot shows the 'Add Device' wizard in the IBM Watson IoT Platform, now at the 'Summary' step. The 'Summary' step is marked with a blue circle, and the 'Security' step is marked with a checkmark. The 'Identity' and 'Device Information' steps are also marked with checkmarks. The 'Summary' step contains a message: 'Verify that the following information is correct then select Finish'. Below this message, there is a table with the following information:

Device Type	NodeMCU
Device ID	200221
Security Token	To be generated

Below the table, there is a 'View Metadata' button. At the bottom right of the wizard, there are 'Back' and 'Next' buttons. The 'Next' button is highlighted in blue.

21. The device credentials will be displayed with all the details.

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes the IBM logo and the text 'IBM Watson IoT Platform'. The user's profile is visible in the top right corner with the email 'harishsaran2102@psnacet.edu.in' and ID 'v9y2pu'. The main content area is titled 'Device Drilldown - 200221'. On the left, there is a sidebar with a list of options: 'Device Credentials' (selected), 'Connection Information', 'Recent Events', 'State', 'Device Information', 'Metadata', 'Diagnostics', 'Connection Logs', and 'Device Actions'. The main panel displays the 'Device Credentials' section. It contains a table with the following information:

Organization ID	v9y2pu
Device Type	Nodemcu
Device ID	200221
Authentication Method	use-token-auth
Authentication Token	AXUxHwj6nNVk4qo5Jl

Below the table, there is a warning icon and a message: 'Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.' At the bottom of the main panel, there is a link: 'Find out how to add these credentials to your device'.

22. Save the details of the device as the authentication tokens are non recoverable and if misplaced then we have to create a new one.

This screenshot is identical to the one above, showing the IBM Watson IoT Platform interface for device 200221. It displays the 'Device Credentials' section with the same table of information and the warning message about non-recoverable authentication tokens.

23. 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.

IBM Watson IoT Platform

Browse Action Device Types Interfaces

Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added
200221	Disconnected	Nodemcu	Device	7 Nov 2022 14:05

Items per page 50 | 1-1 of 1 item

1 of 1 page

IBM Watson IoT Platform

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Items per page 50 | 1-1 of 1 item

1 of 1 page

Identity Device Information Recent Events State Logs

Device ID 200221

Device Type Nodemcu

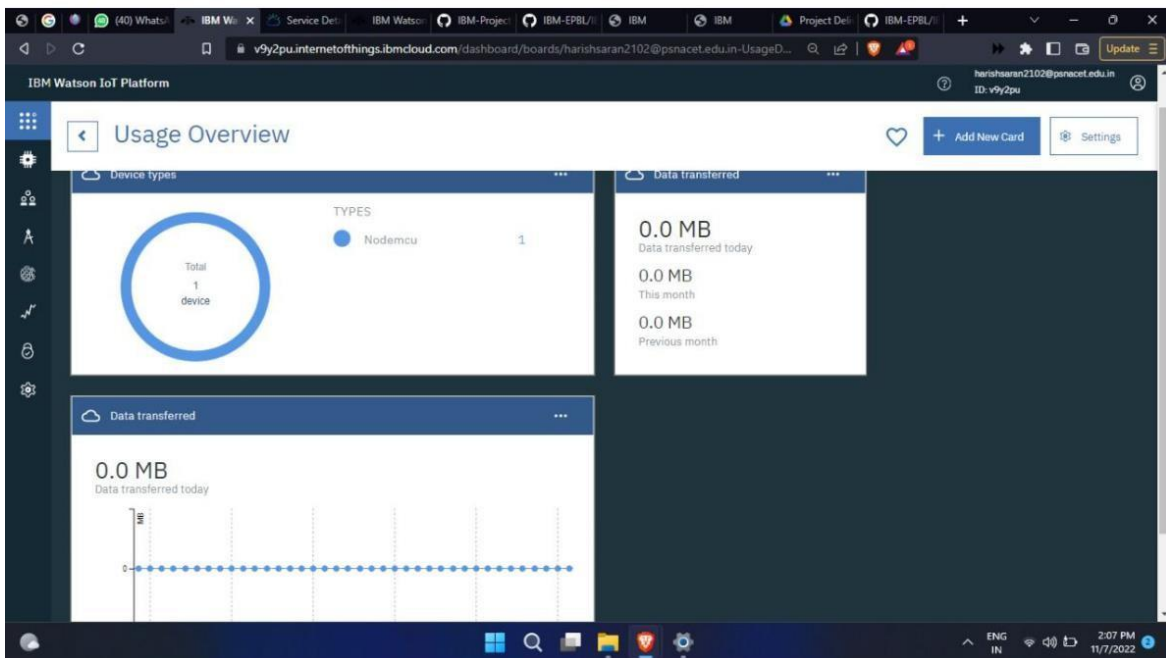
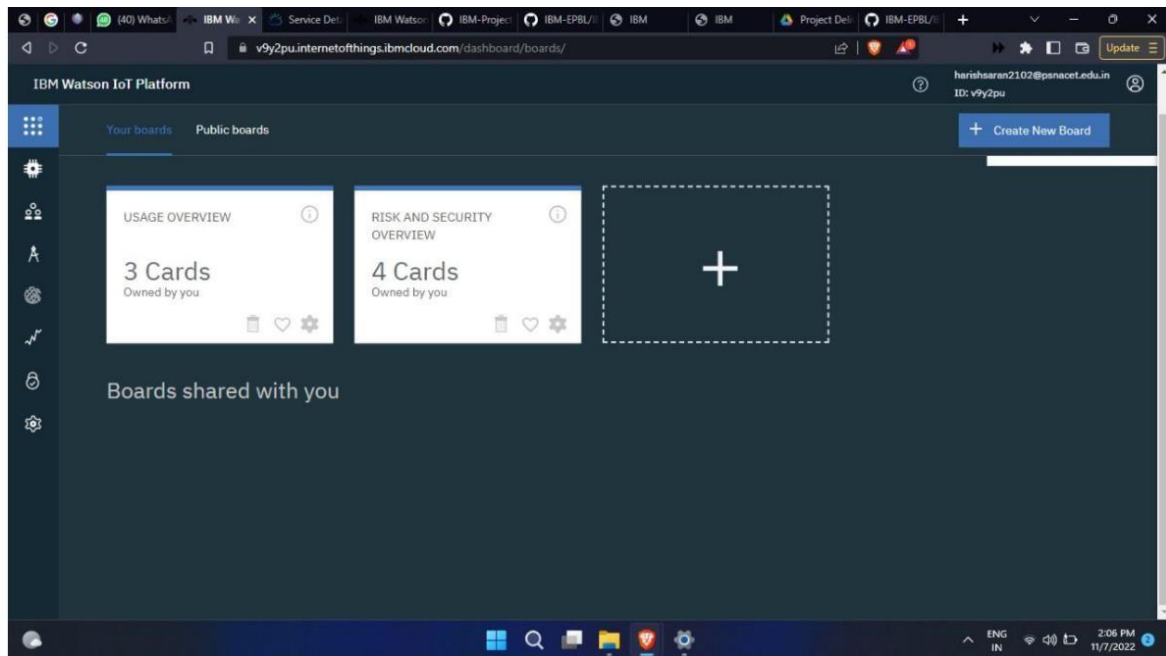
Date Added 7 Nov 2022 14:05

Added By harishsaran2102@psnacet.edu.in

Connection Status Disconnected

In a similar way, we can create n number of devices with a 50 per page limit as per the requirement of our project.

24. The Boards will display card for the project.



RESULT:

An IBM Watson cloud for IoT and a device is create