

# CREATE IBM WATSON IOT PLATFORM AND DEVICE

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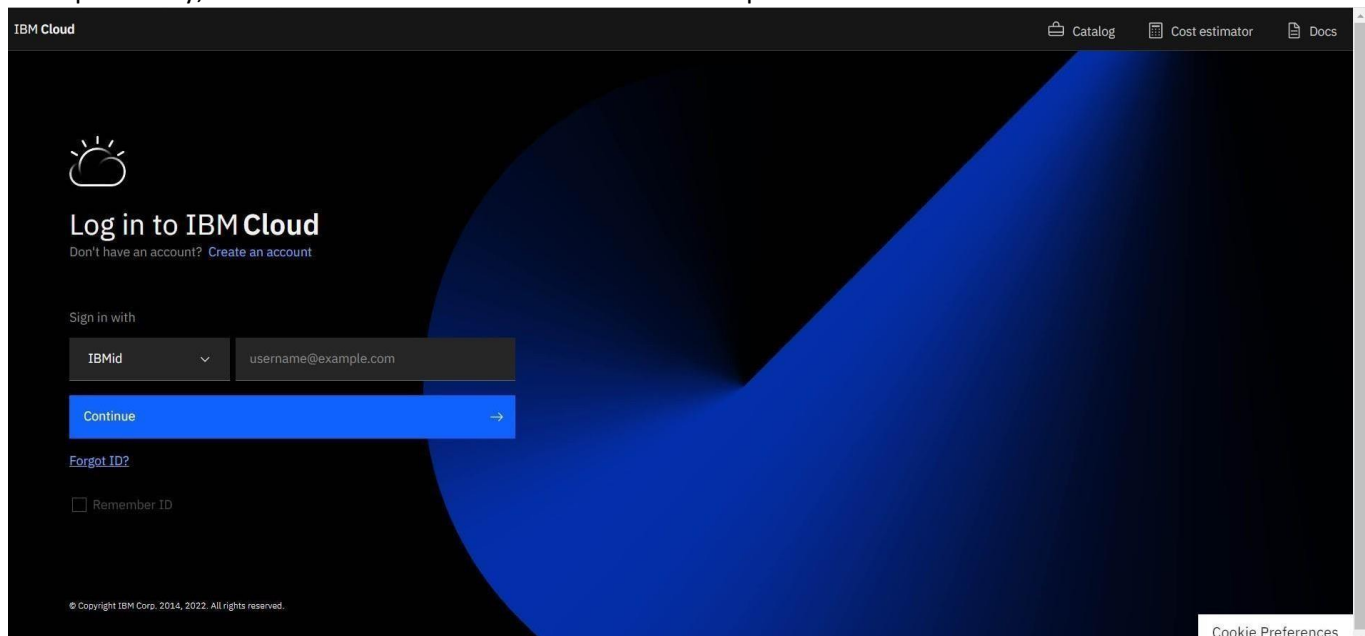
Date	10 November 2022
Team ID	PNT2022TMID18986
Project Name	Gas leakage monitoring and alerting system for industries

### AIM:

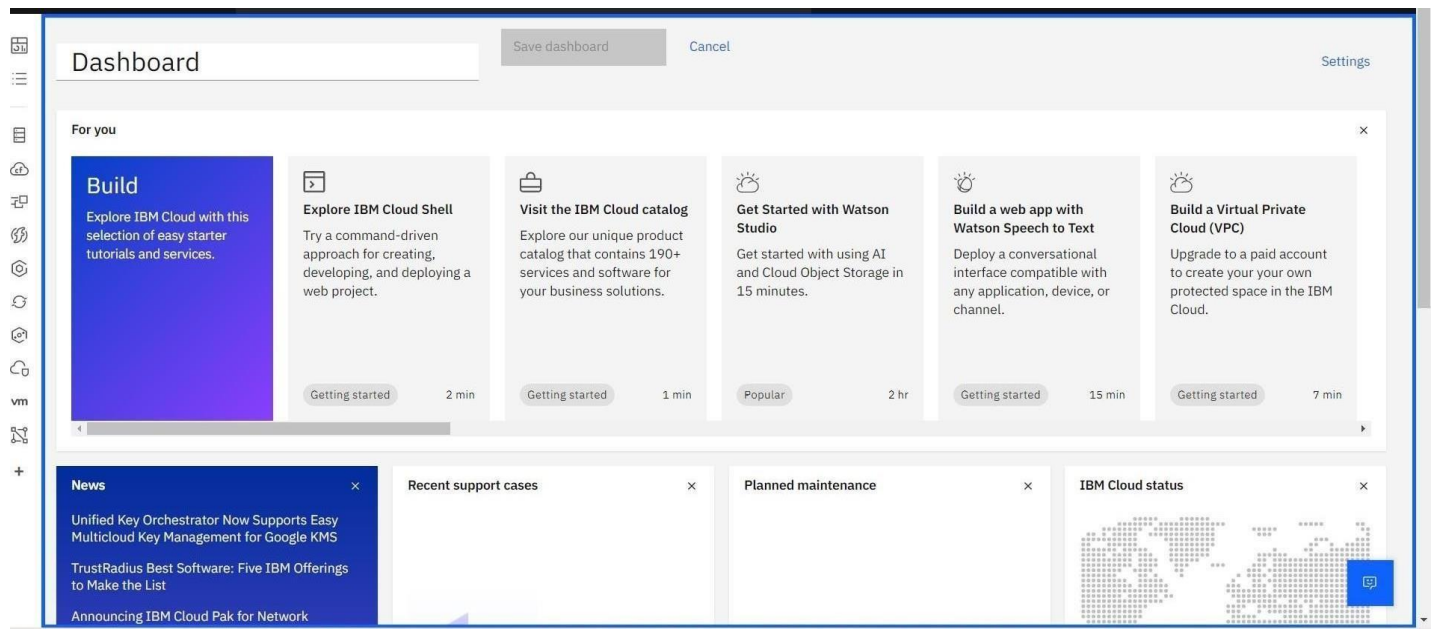
To create the IBM Watson IoT platform and device.

### Steps to be followed

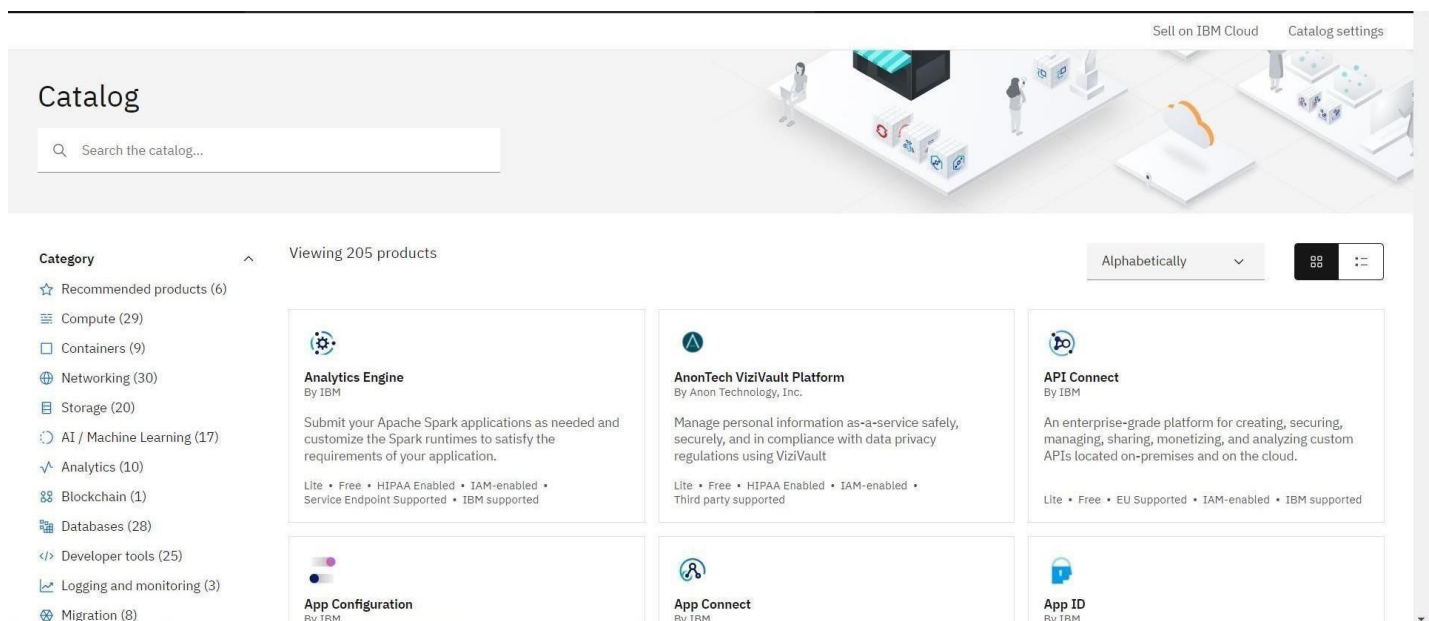
Step 1: Firstly, create an IBM cloud account with IBM id and password.



## Step 2: Home page of IBM cloud.



## Step 3: Click on the catalog on the top.



#### Step 4: Click on IoT in the category mentioned.

The screenshot shows the IBM Cloud catalog interface. On the left, a sidebar lists various categories: Compute (29), Containers (9), Networking (30), Storage (20), AI / Machine Learning (17), Analytics (10), Blockchain (1), Databases (28), Developer tools (25), Logging and monitoring (3), Migration (8), Integration (10), **Internet of Things (1)** (highlighted), Security (25), and Mobile (1). Below the categories, there's a 'Type' filter with 'All' selected. The main area displays a grid of service cards. The first row includes 'Analytics Engine' (By IBM), 'AnonTech ViziVault Platform' (By Anon Technology, Inc.), and 'API Connect' (By IBM). The second row includes 'App Configuration' (By IBM), 'App Connect' (By IBM), and 'App ID' (By IBM). The third row includes 'Bare Metal Servers for Classic' (By IBM), 'Bare Metal Servers for VPC' (By IBM), and 'Block Storage' (By IBM). Each card provides a brief description and a list of features or supported environments.

#### Step 5: Click on Internet of Things Platform.

The screenshot shows the IBM Cloud catalog interface with the 'Internet of Things Platform' service selected. The browser address bar shows 'cloud.ibm.com/catalog?category=iot'. The sidebar on the left shows the 'Type' filter with 'All' selected. The main area displays the 'Internet of Things Platform' service card, which includes the following details:

- Service Name:** Internet of Things Platform
- Provider:** By IBM
- 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.
- Pricing plan:** Lite • Free • IAM-enabled • IBM supported

The sidebar also shows filters for 'Provider' (IBM (1)), 'Pricing plan' (Lite, Free), 'Compliance' (IAM-enabled), and 'Location'. A 'Learn more' link is visible at the bottom of the sidebar.

Step 6: If already a lite is present delete it else u can't create another.

Last updated  
08/15/2022

Category  
Internet of Things

Compliance  
IAM-enabled

Location  
Frankfurt  
London  
Dallas  
Washington DC

Related links  
[Docs](#)  
[Terms](#)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features	Pricing
Lite	<b>Includes up to 500 registered devices, and a maximum of 200 MB of each data metric</b> 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  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. <b>Lite plan services are deleted after 30 days of inactivity.</b>	Free

Configure your resource

Service name  
Internet of Things Platform-gm

Tags ⓘ  
Examples: env:dev, version-1

Select a resource group ⓘ  
Default

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

Summary

**Internet of Things Platform** **Free**

Location: Frankfurt  
Plan: Lite  
Service name: Internet of Things Platform-gm  
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

Step 7: Tick agreements and then click on create.

Last updated  
08/15/2022

Category  
Internet of Things

Compliance  
IAM-enabled

Location  
Frankfurt  
London  
Dallas  
Washington DC

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☐ I have read and agree to the following license agreements:  
[Terms](#) ⓘ

Create

Add to estimate

Step 8: Click on the launch button.

Resource list /

## Internet of Things Platform-gb

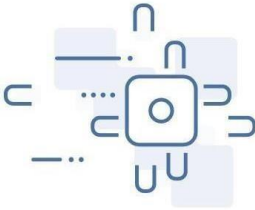
Active Add tags

Details Actions...

Manage

Plan

Connections



### Let's get started with IBM Watson IoT Platform

Securely connect, control, and manage devices. Quickly build IoT applications that analyze data from the physical world.

Launch Docs

Ready for the next level?

#### IBM Watson IoT Platform Journey

✓

##### Lite

The Lite service plan provides a lightweight development environment to get you started with the connectivity capabilities of Watson IoT Platform.

○

##### 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.

○

##### Production

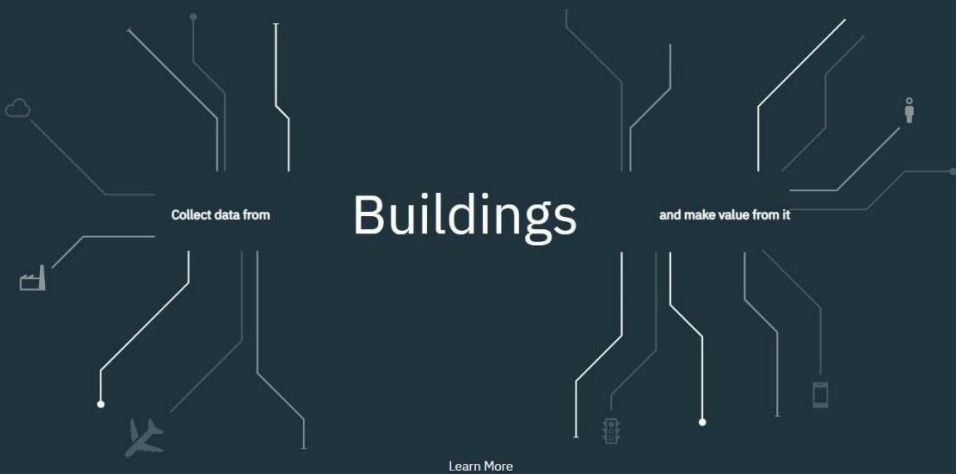
The Production service is a fully managed SaaS offering that enables you to manage and analyze enterprise IoT data.

Chat icon

Step 9: After clicking on the launch button this tab will open.

IBM Watson IoT Platform

Sign in



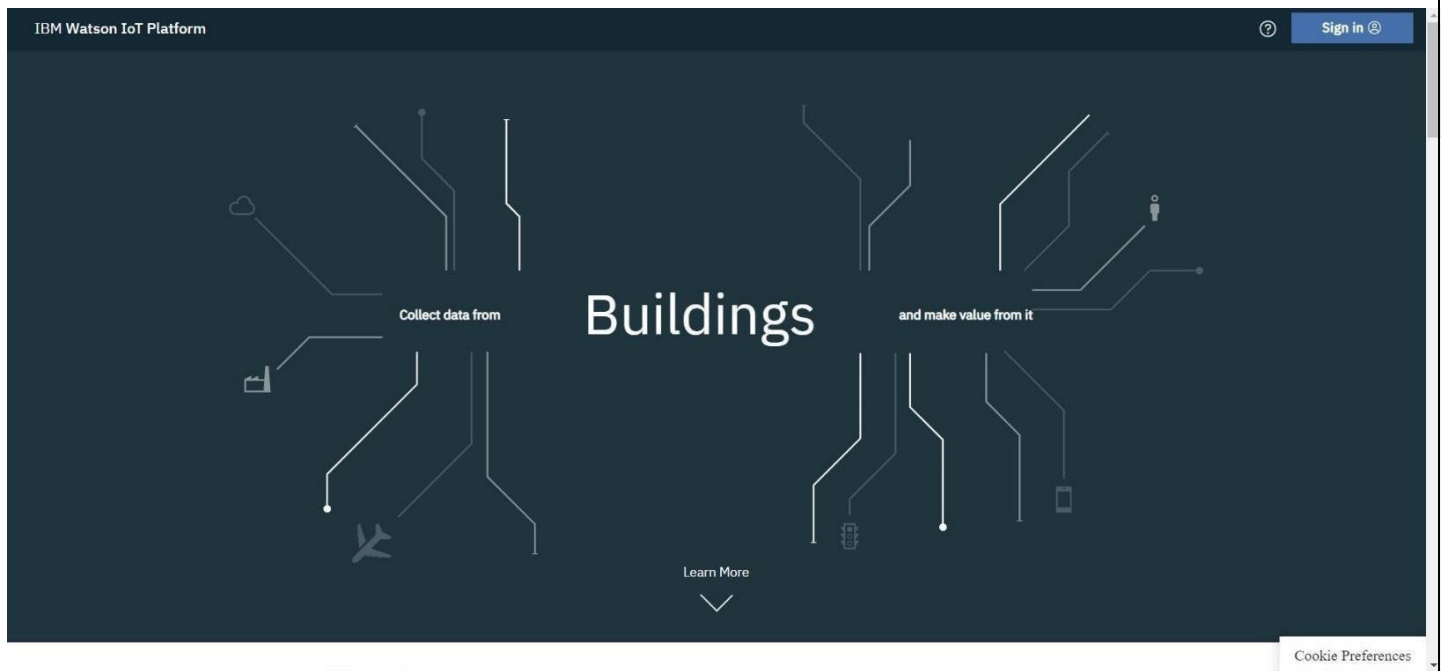
# Buildings

Collect data from and make value from it

Learn More

Cookie Preferences

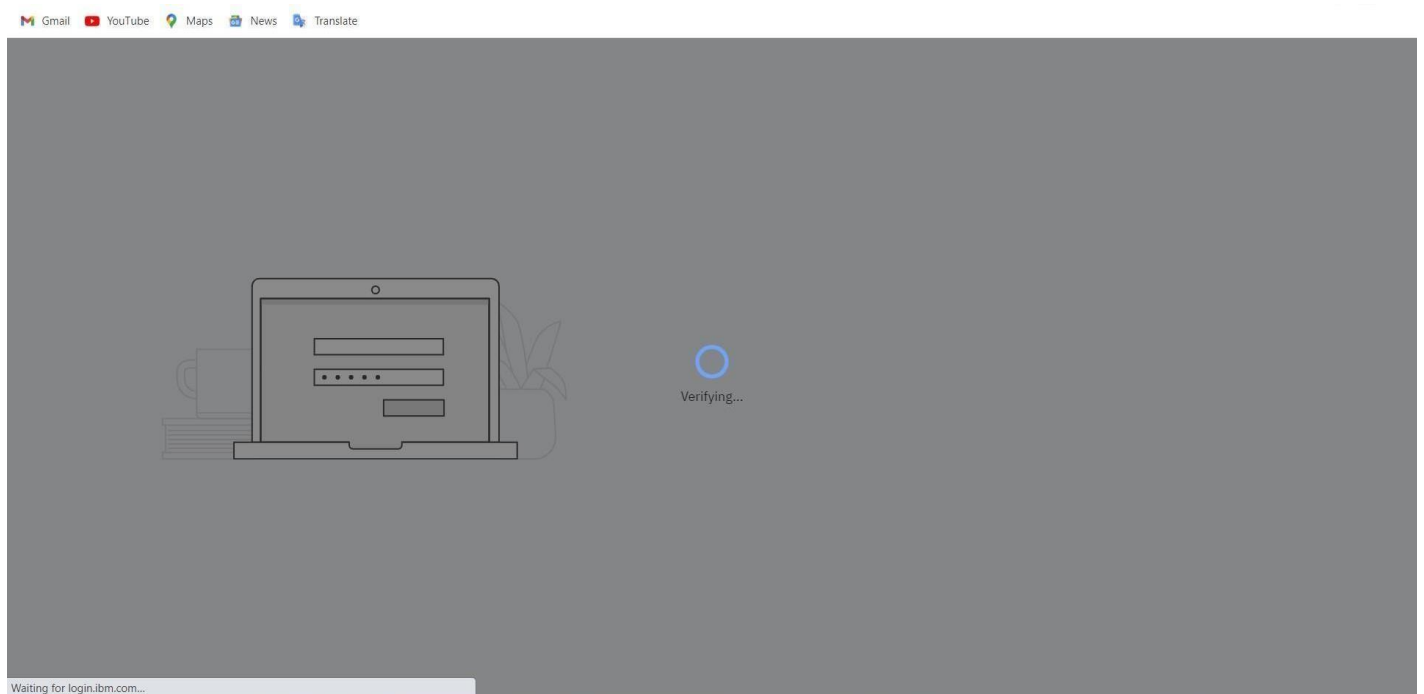
Step 10: Click on Sign in.



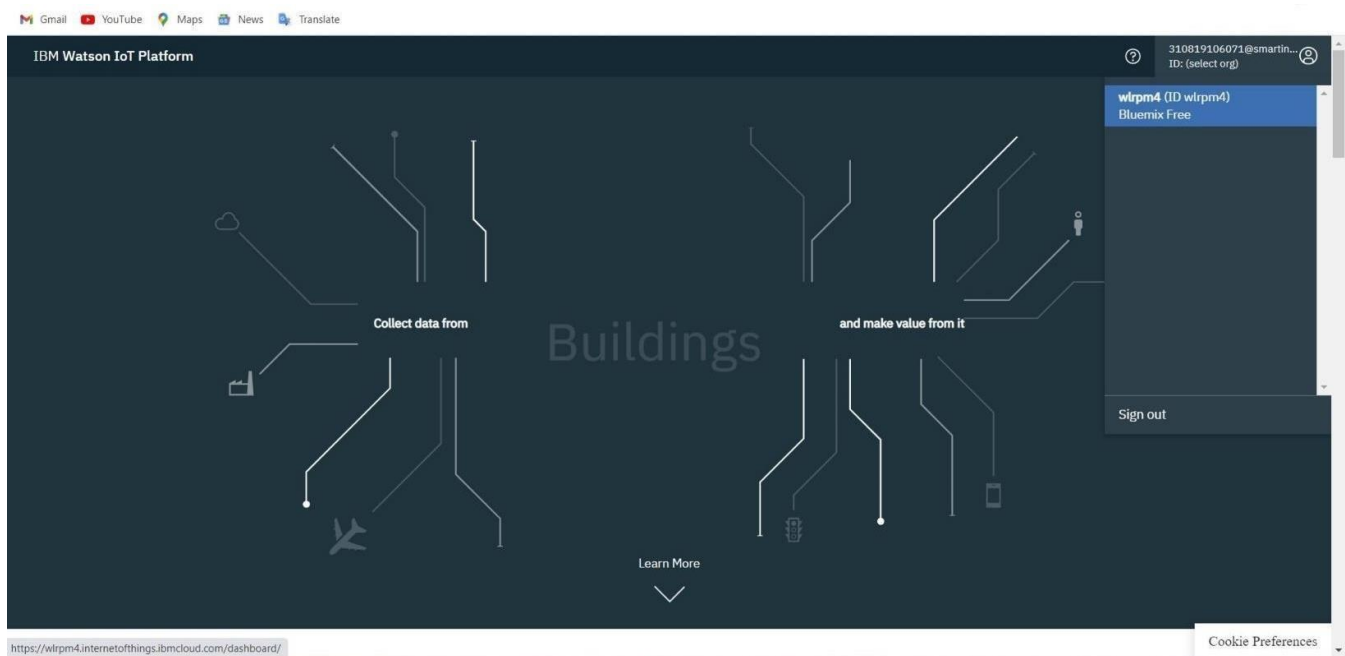
Step 11: Fill the login details.

The screenshot shows the IBM login page. At the top left is the IBM logo. The main content area is a light gray rectangle. Inside this rectangle is a white box titled "Log in to IBM". Below the title is a text input field labeled "IBMId" with a "Forgot IBMId?" link to its right. Below the input field is a checkbox labeled "Remember me" with an information icon. Below the checkbox is a blue "Continue" button with a right arrow. Below the button is a link that says "Don't have an account? Create an IBMId". At the bottom of the white box is a link that says "Need help? Contact the IBMId help desk". At the very bottom of the page is a dark gray footer bar containing links for "Contact", "Privacy", "Terms of use", and "Cookie preferences", followed by the text "Powered by IBM Security Verify" and a long URL.

Step 12: Sign in on progress.



Step 13: Once it is logged in, the name will be displayed click on it and then click on Bluemix Free.



Step 14: This is the IBM Watson platform.

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

Browse Action Device Types Interfaces

Add Device +

## 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 ☒

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
>	<input type="checkbox"/> 14325	Disconnected	Testdevicetype	Device	Nov 5, 2022 5:33 AM	

Items per page 50 | 1-1 of 1 item

1 of 1 page < 1 >

Microsoft Store

0 Simulations running

Step 15: Click on Add Device.

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

Browse Action Device Types Interfaces

Add Device +

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Items per page 50 | 1-1 of 1 item

1 of 1 page < 1 >

0 Simulations running



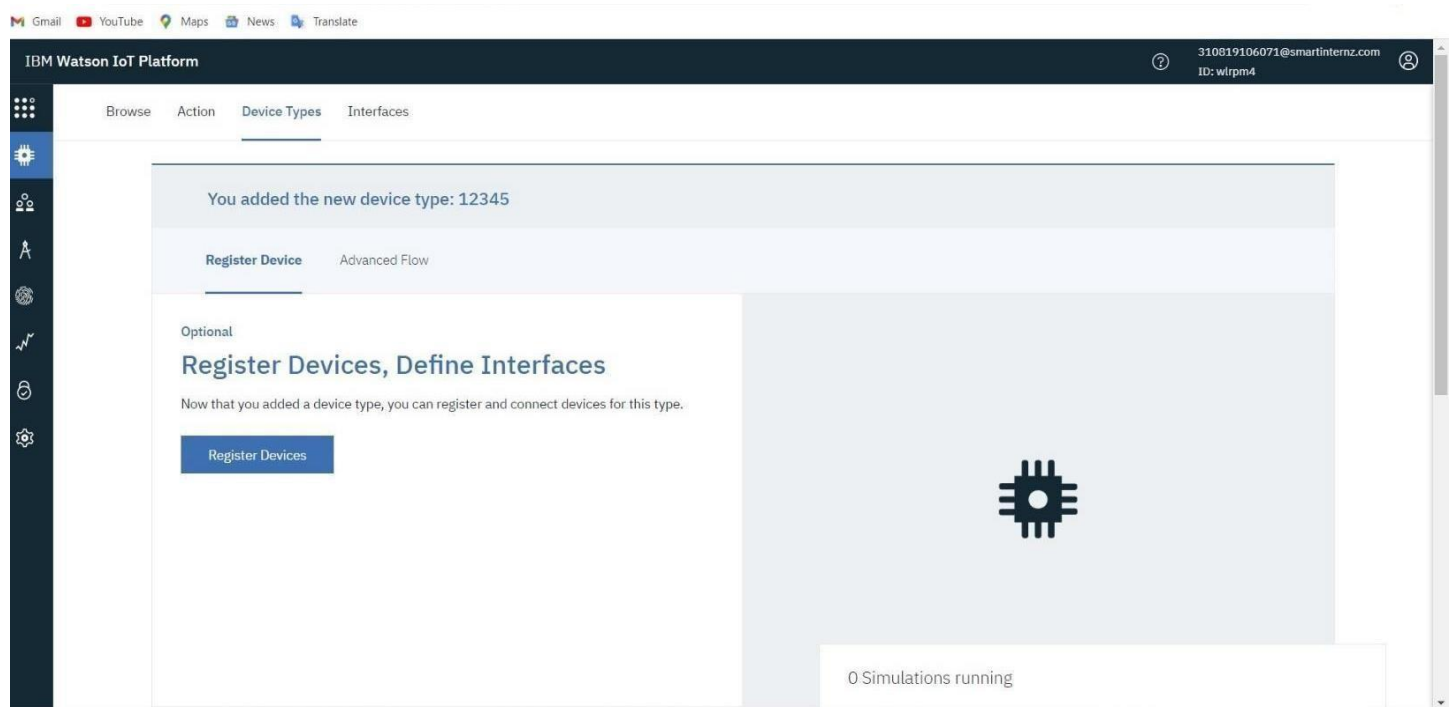
## Step 16: Click on Device Type.

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 'Identity' step is currently active. Below the step indicator, there is a text prompt: 'Select a device type for the device that you are adding and give the device a unique ID.' There are two input fields: 'Device Type' with a dropdown menu showing 'Select or create a device type...' and 'Device ID' with a text input field containing 'Enter Device ID'. At the bottom right of the wizard, there are 'Cancel' and 'Next' buttons. Below the wizard, the 'Browse Devices' section is visible, showing '0 Simulations running' and an 'Adobe Express' button.

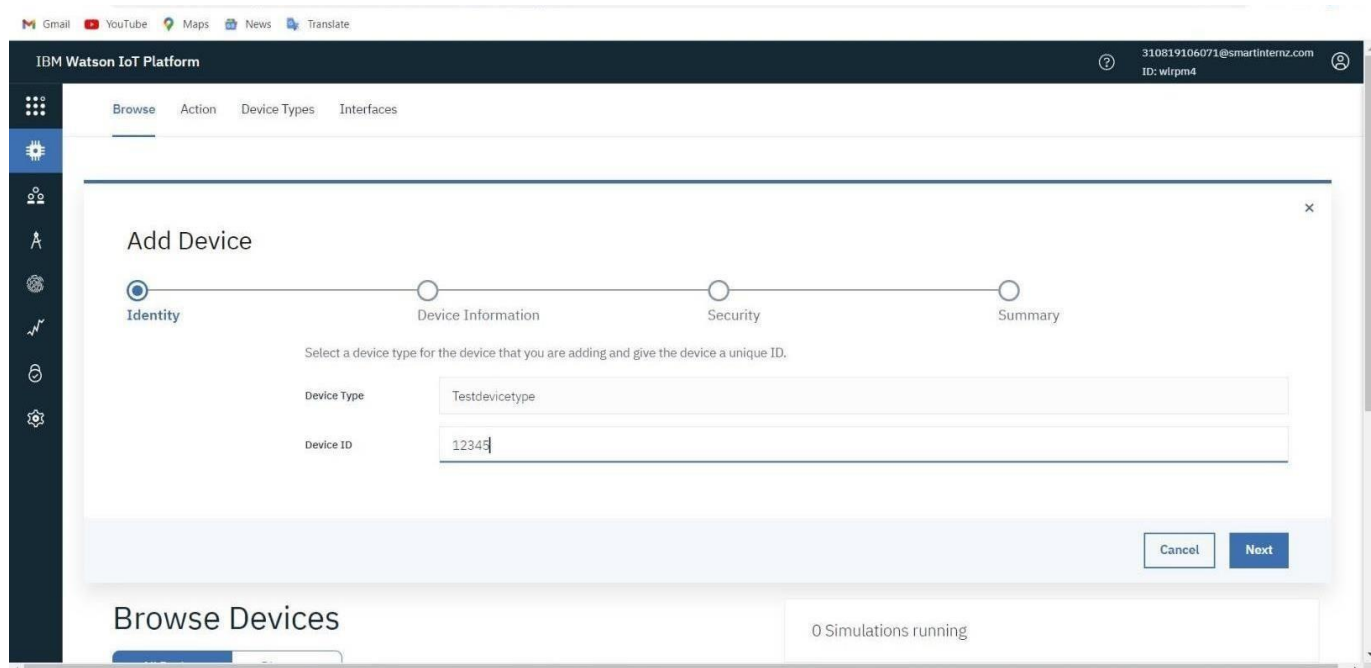
## Step 17: Fill the details.

The screenshot shows the 'Add Type' wizard in the IBM Watson IoT Platform. The wizard has two steps: Identity and Device Information. The 'Identity' step is currently active. Below the step indicator, there is a text prompt: 'Device types group devices that have similar characteristics, such as model number, firmware version, or location. Give the device type a unique name and a description that identifies characteristics that are shared by devices of this type.' There are three input fields: 'Type' with a dropdown menu showing 'Device' and 'Gateway' separated by 'Or', 'Name' with a text input field containing '12345', and 'Description' with a text input field. Below the wizard, the '0 Simulations running' status is visible.

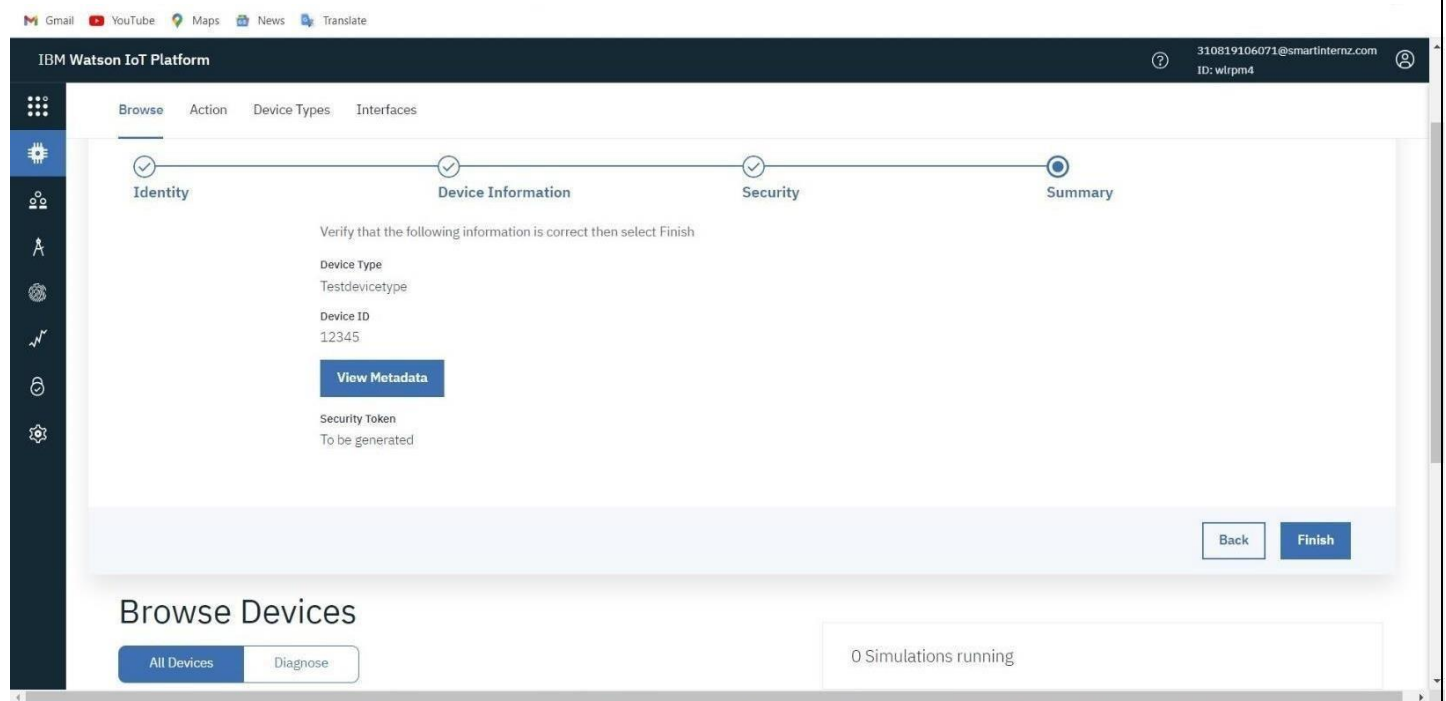
Step 18: Click on Register Devices.



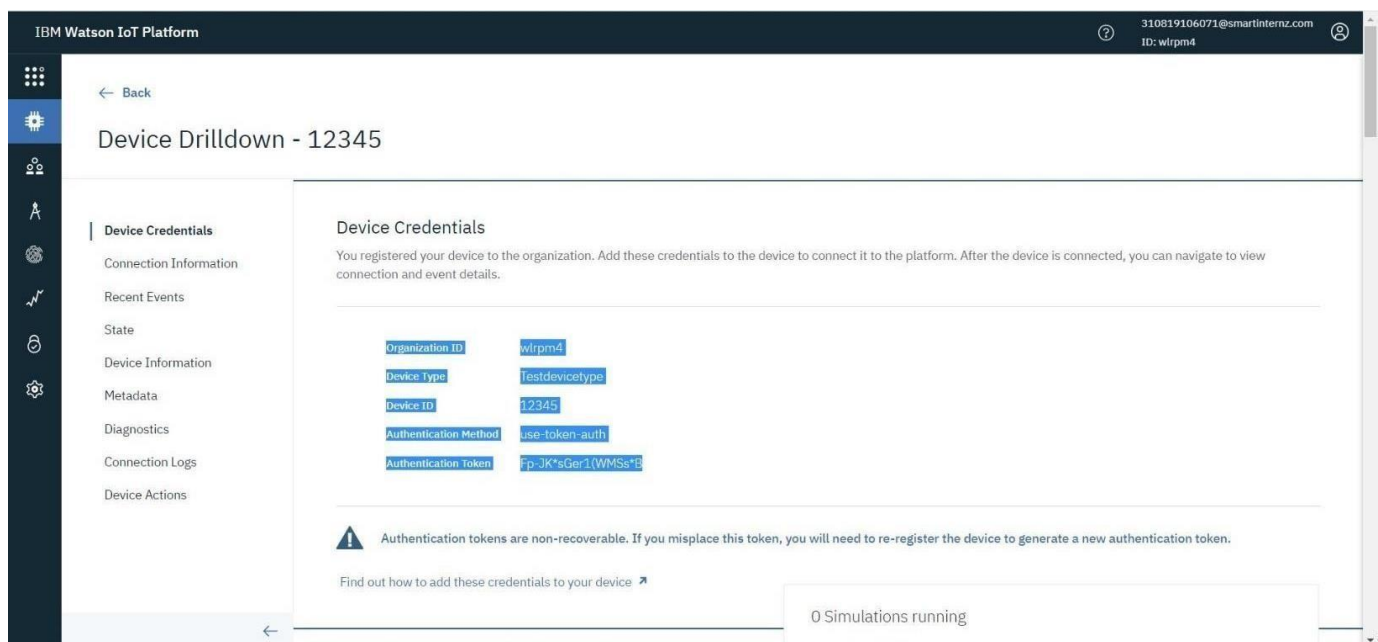
Step 19: Give the device name which you have created and give Device ID.



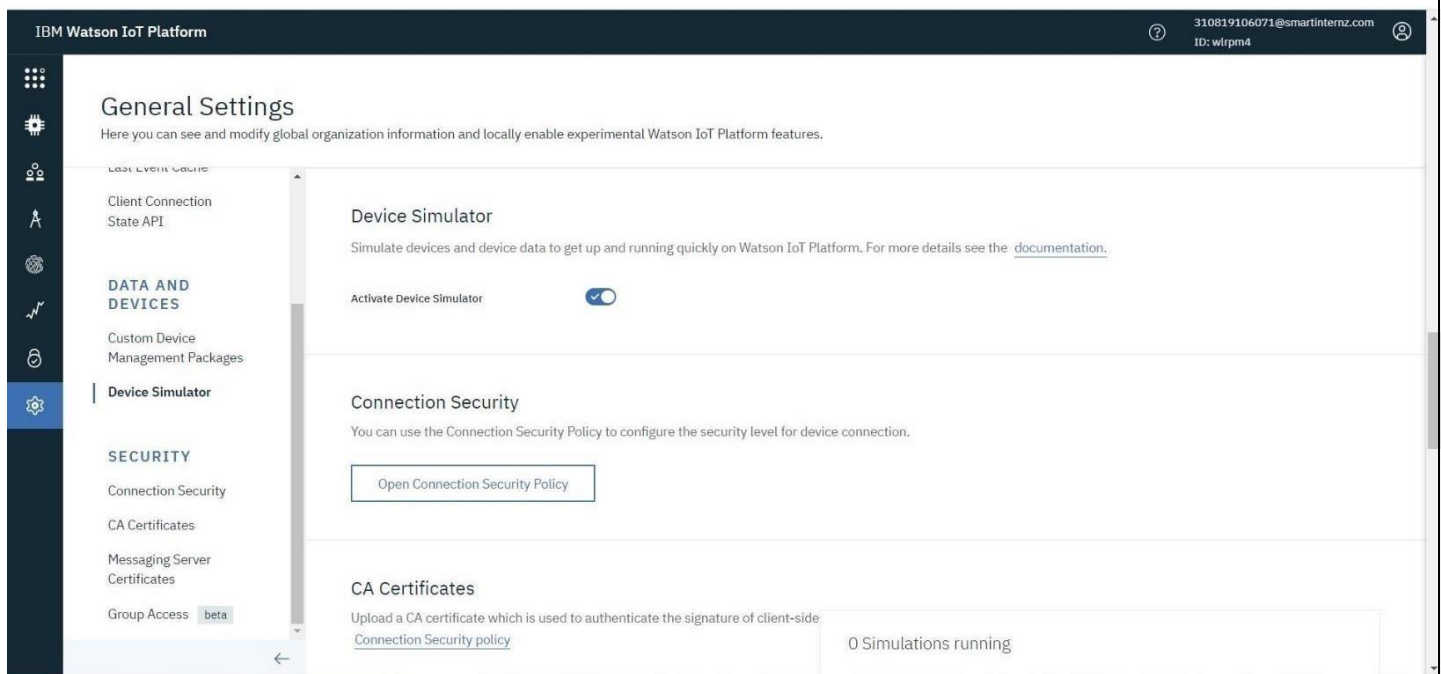
Step 20: After giving all the data, Click on Finish.



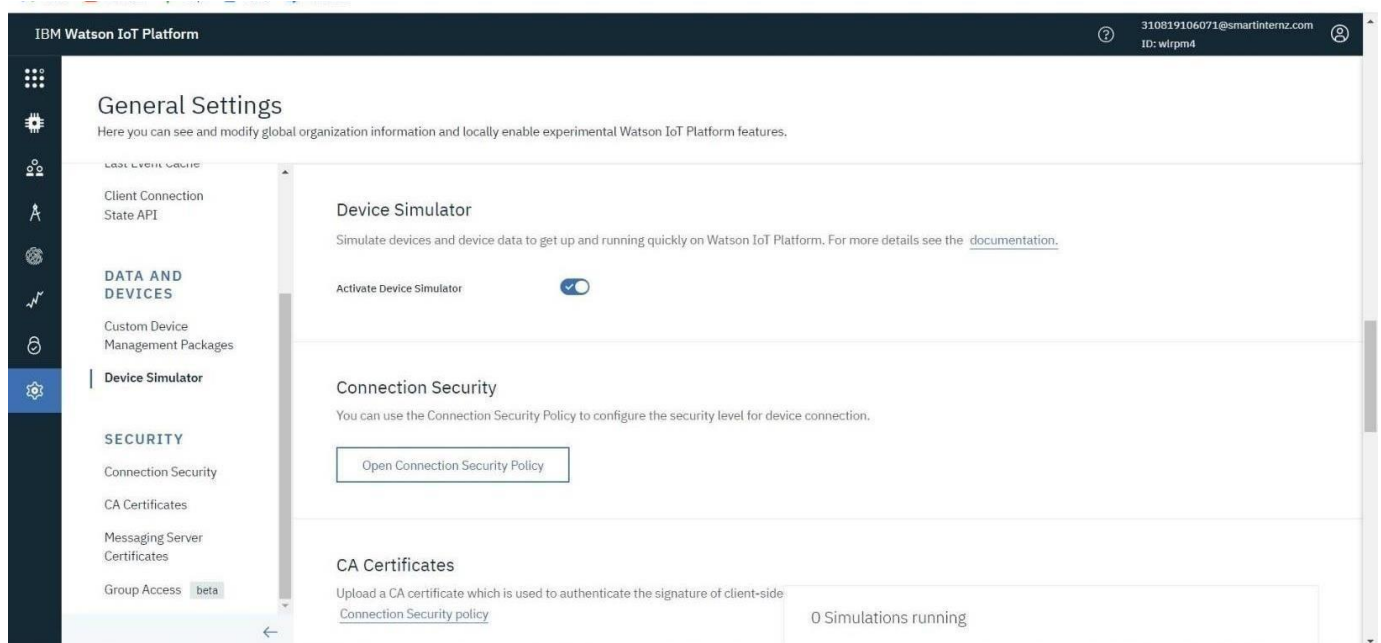
Step 21: After creating the device, Copy the Device Credentials.



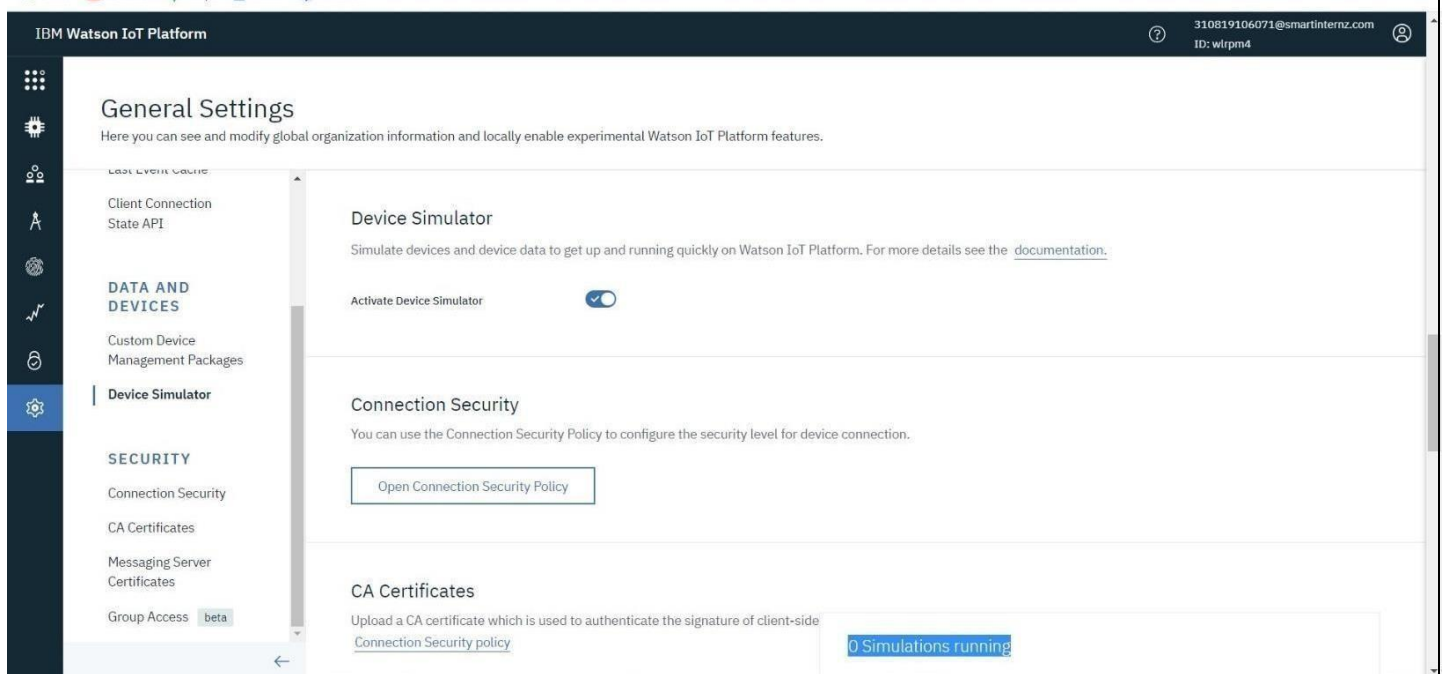
Step 22: Go to Setting, click on Data and Devices.



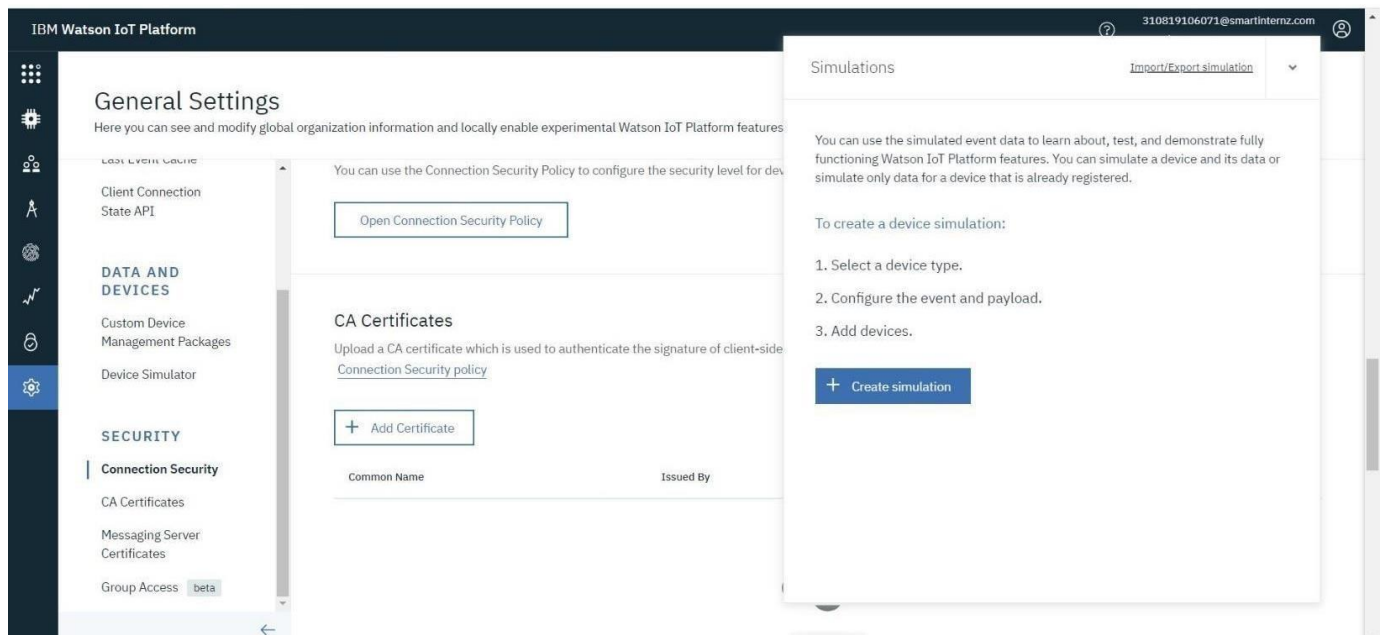
Step 23: Then click on Device Simulator and Activate Device Simulator.



Step 24: Click on the pop-up screen on the right side.



Step 25: Click on Create Simulation.



## Step 26: Choose the Device.

The screenshot shows the IBM Watson IoT Platform interface. The left sidebar contains navigation links for General Settings, DATA AND DEVICES, and SECURITY. The main content area is titled 'General Settings' and includes sections for 'Client Connection State API', 'CA Certificates', and 'Connection Security'. A modal window titled 'Simulations' is open on the right, displaying instructions on how to create a device simulation and a dropdown menu to 'Select or create a device type...'.

IBM Watson IoT Platform

### General Settings

Here you can see and modify global organization information and locally enable experimental Watson IoT Platform features.

Client Connection State API

Open Connection Security Policy

#### DATA AND DEVICES

Custom Device Management Packages

Device Simulator

#### SECURITY

Connection Security

CA Certificates

Messaging Server Certificates

Group Access beta

#### Simulations

Import/Export simulation

You can use the simulated event data to learn about, test, and demonstrate fully functioning Watson IoT Platform features. You can simulate a device and its data or simulate only data for a device that is already registered.

To create a device simulation:

1. Select a device type.
2. Configure the event and payload.
3. Add devices.

Select or create a device type...

## Step 27: Type the code.

The screenshot shows the IBM Watson IoT Platform 'Browse Devices' page. The left sidebar contains navigation links for Browse, Action, Device Types, and Interfaces. The main content area is titled 'Browse Devices' and includes a table of devices. A modal window is open on the right, showing the configuration for a device named 'Testdevicetype' with ID '12345'. The modal includes fields for 'Event type name' (event\_1), 'Frequency' (20 x Every Minute), and a 'Payload' editor with a JSON payload.

IBM Watson IoT Platform

### 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 ID	Status	Device Type	Class ID	Data
12345	Disconnected	Testdevicetype	Device	No
14325	Disconnected	Testdevicetype	Device	No

Items per page 50 | 1-2 of 2 items

#### Testdevicetype 12345

##### Events 1

Event type name: event\_1 Frequency: 20 x Every Minute Send

##### Payload

You can override field values in the event payload that is sent by this device. Specify the override values in the editor window.

```
0 {
1   "temperature": random(0, 100),
2   "humidity": random(0, 100)
3 }
4
```

What functions can I apply?

Cancel Save

Step 28: Click on Use Registered Device and choose the device and run it.

The screenshot shows the IBM Watson IoT Platform 'General Settings' page. The left sidebar contains navigation links for 'General Settings', 'DATA AND DEVICES', and 'SECURITY'. The 'SECURITY' section is expanded, showing 'Connection Security', 'CA Certificates', 'Messaging Server Certificates', and 'Group Access'. The 'CA Certificates' section is active, displaying a table with columns 'Common Name' and 'Issued By'. An overlay window titled 'Simulations' is open on the right, showing '1/50 Simulations Running' and a list of devices. The device '12345' is selected, and the 'Use Registered Device' button is highlighted. The overlay also shows '2 events sent' and '76 bytes sent'.

Step 29: Go to devices then click on devices and check the recent events whether the code is running or not.

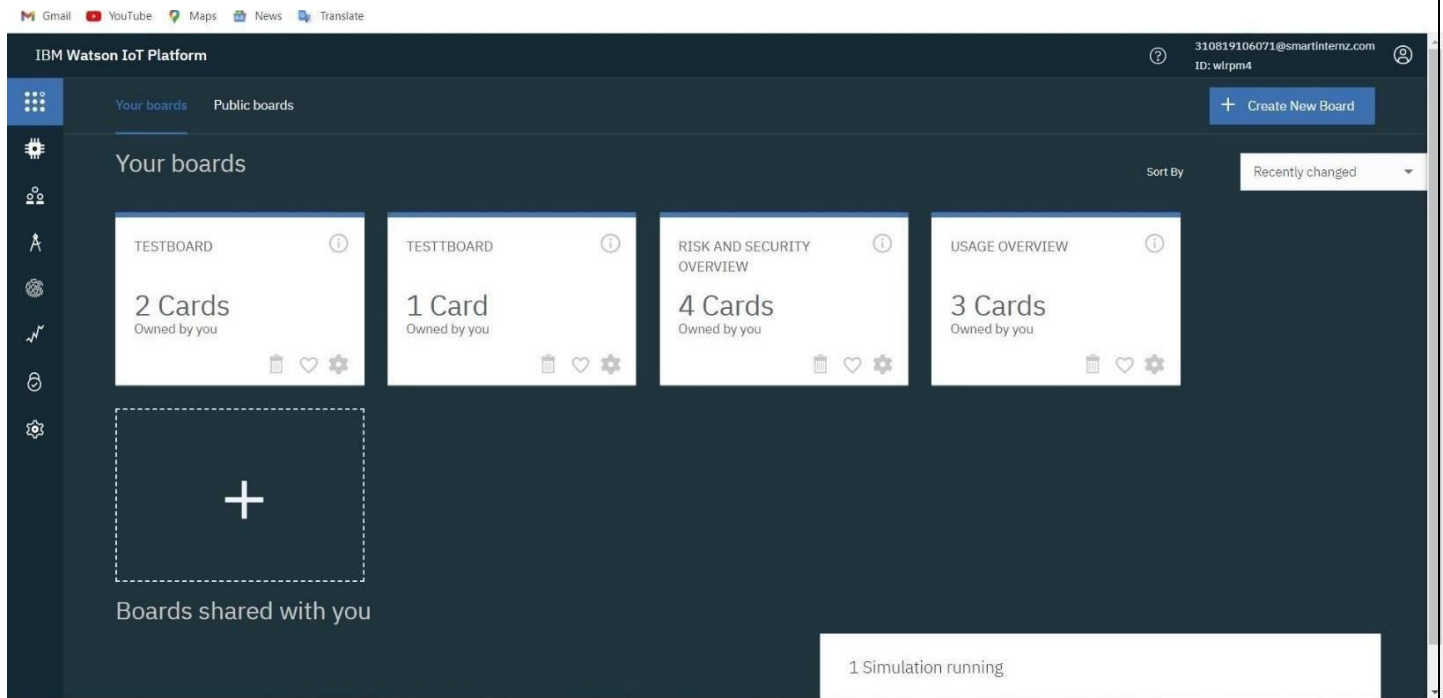
The screenshot shows the IBM Watson IoT Platform 'Devices' page. The left sidebar contains navigation links for 'Browse', 'Action', 'Device Types', and 'Interfaces'. The 'Device Types' section is active, displaying a table with columns 'Device ID', 'Status', 'Device Type', 'Class ID', 'Date Added', and 'Descriptive Location'. The device '12345' is selected, and the 'Recent Events' tab is active. The 'Recent Events' tab shows a list of events with columns 'Event', 'Value', 'Format', and 'Last Received'. The events are listed as follows:

Event	Value	Format	Last Received
event_1	{\"temperature\":63,\"humidity\":8}	json	a few seconds ago
event_1	{\"temperature\":56,\"humidity\":9}	json	a few seconds ago
event_1	{\"temperature\":40,\"humidity\":76}	json	a few seconds ago
event_1	{\"temperature\":61,\"humidity\":36}	json	a few seconds ago

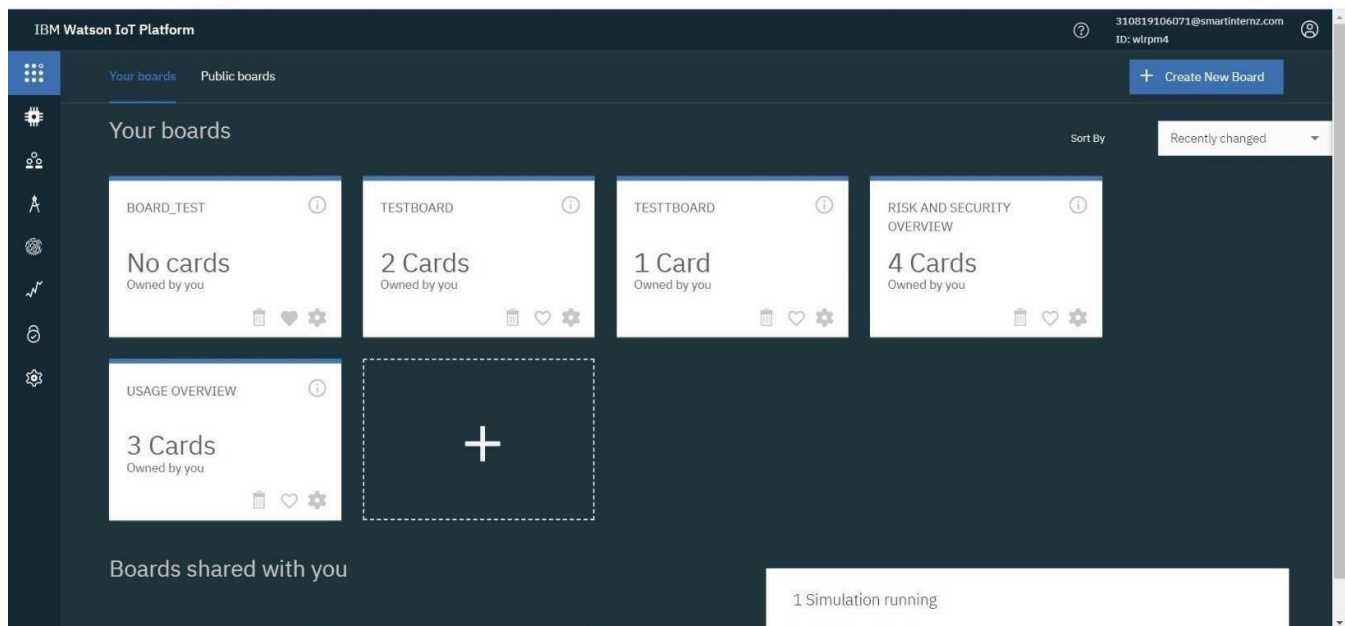
At the bottom of the page, it says '1 Simulation running'.



Step 30: Go to Board and click on + Create New Board, fill the details and create a board.

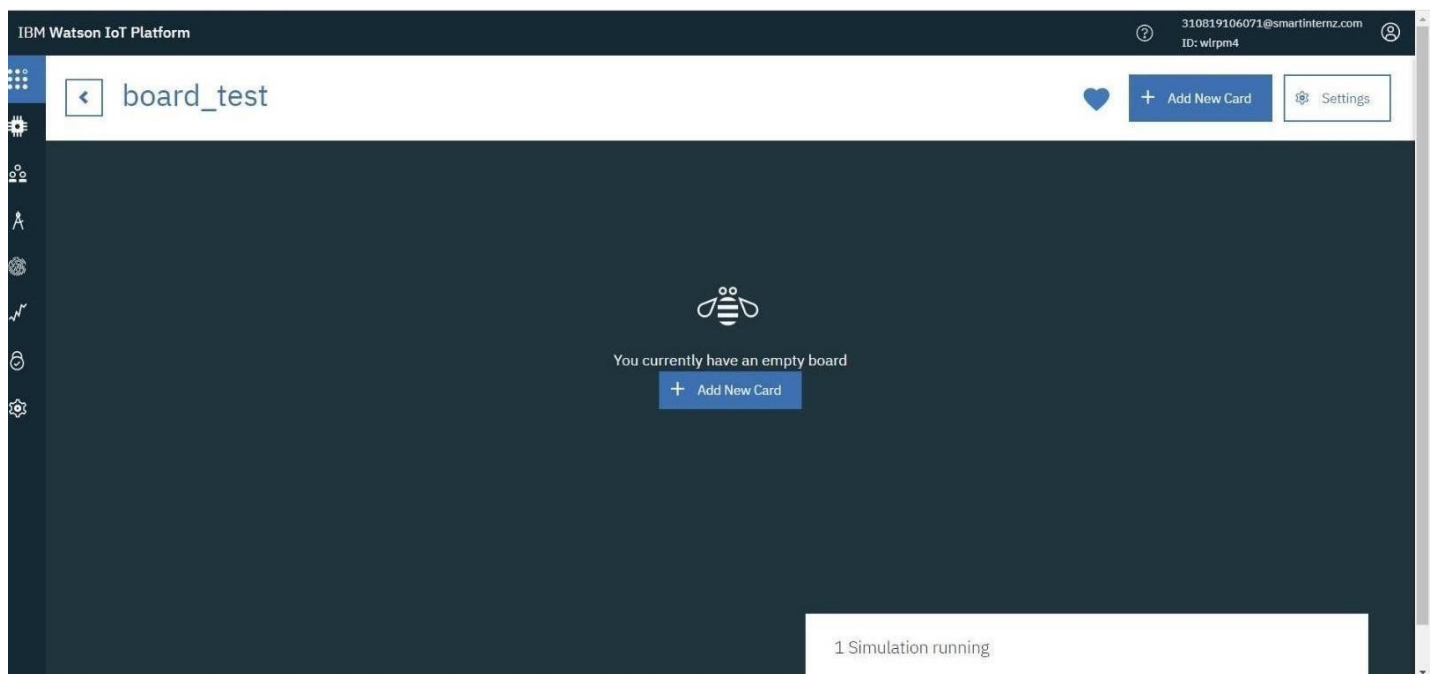


Step 31: Click on the board which is created.

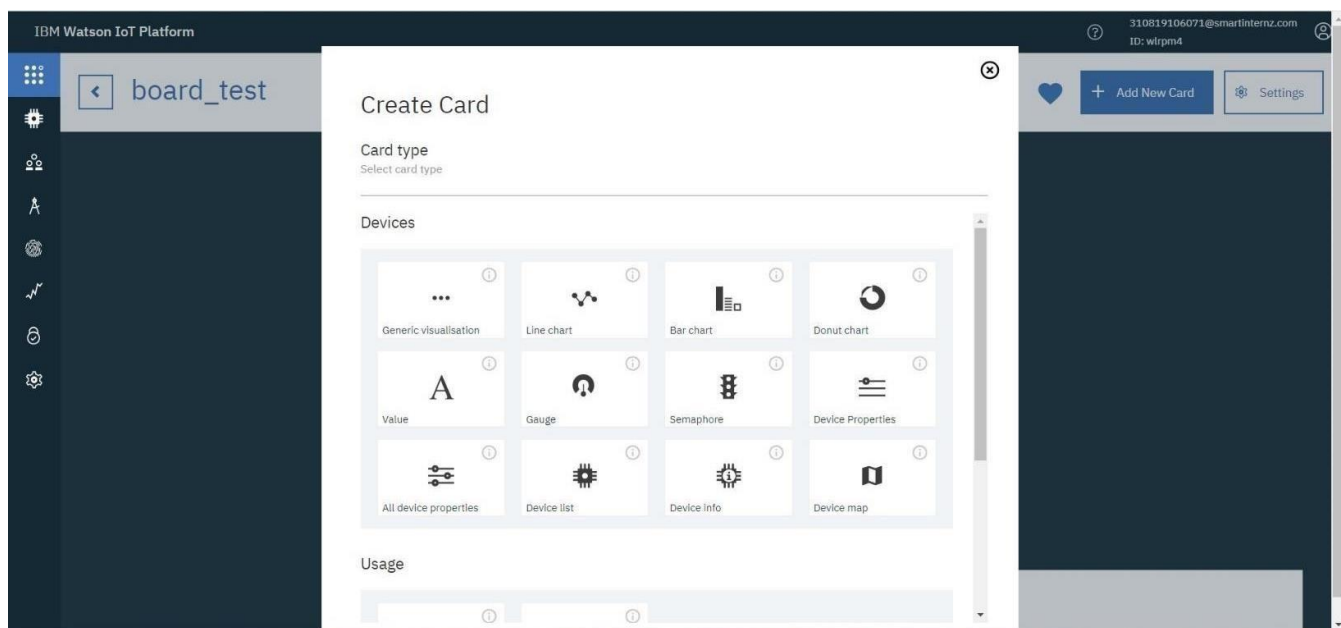




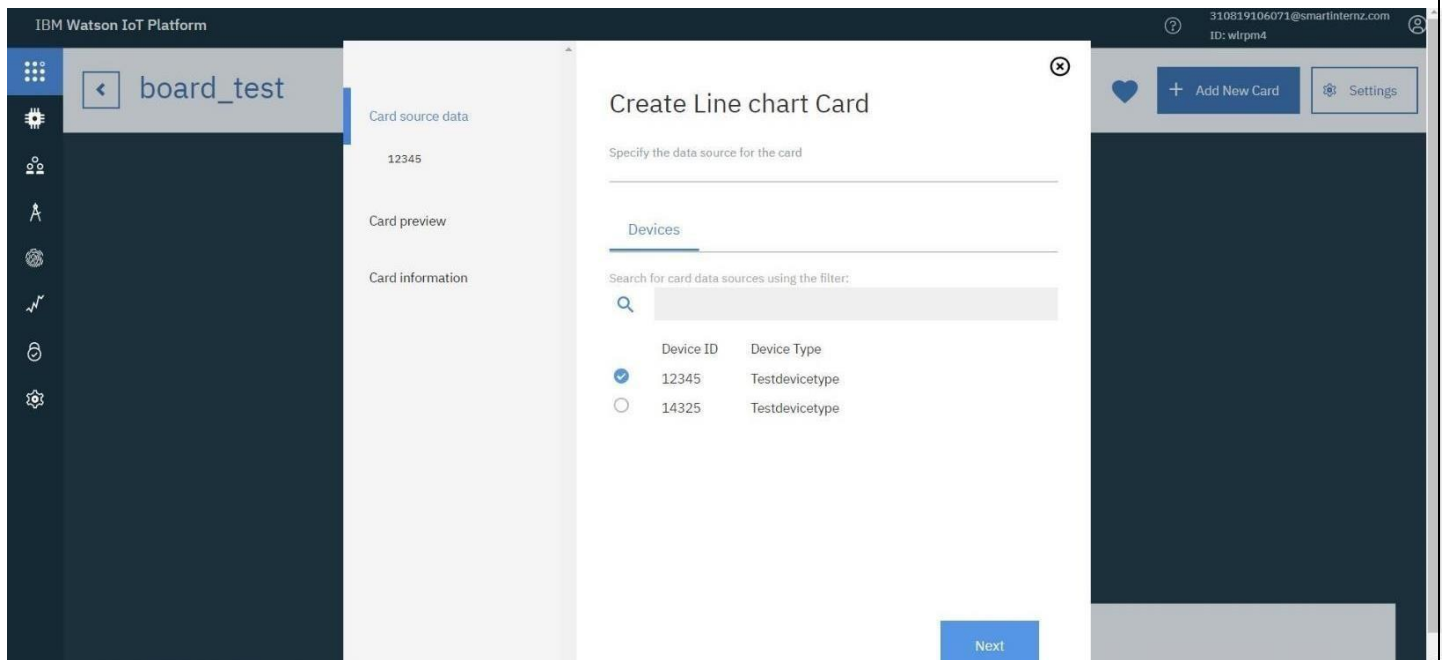
Step 32: Go Add New Card.



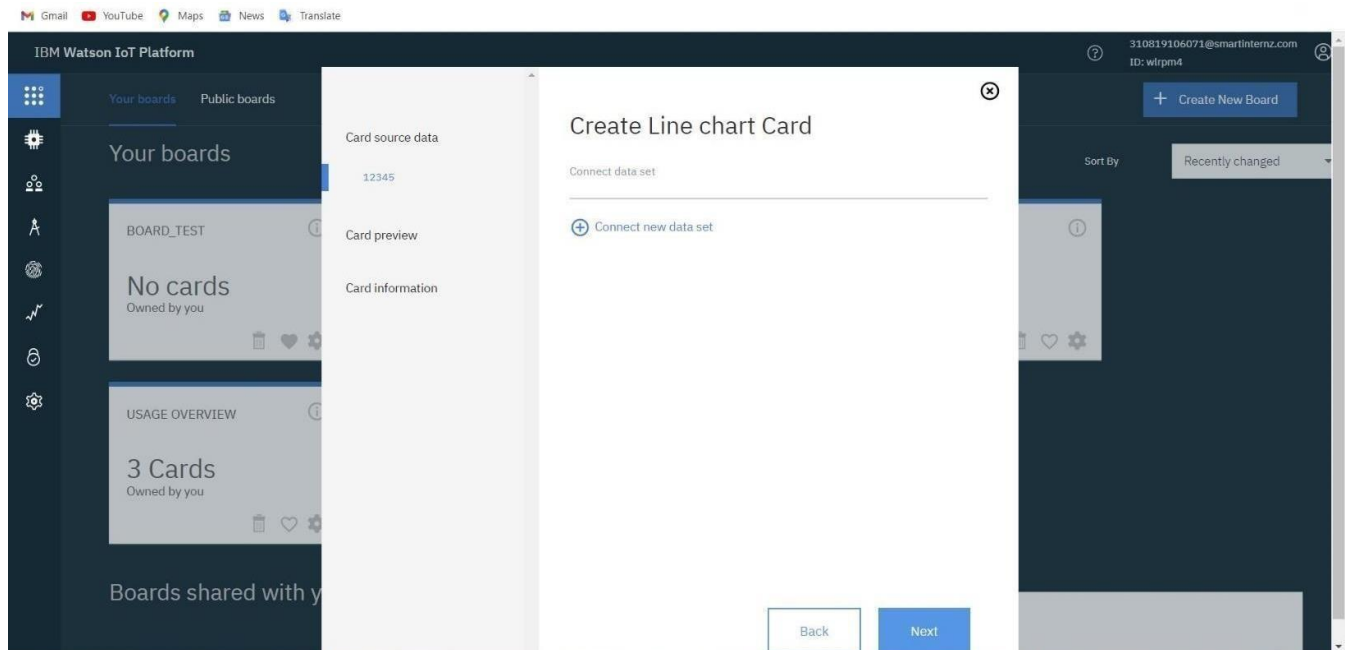
Step 33: Choose the Card Type.



Step 34: Choose the device.



Step 35: Click on Connect new data set.



Step 36: Fill the details to get Temperature graph.

IBM Watson IoT Platform

board\_test

Card source data

12345

Card preview

Card information

### Create Line chart Card

Connect data set

temperature

Event

event\_1

Property

temperature

Name

temperature

Type

Number

Unit

°C

Min

0

Max

100

Back

Next

Step 37: Choose the Colour.

IBM Watson IoT Platform

Your boards

Public boards

BOARD\_TEST

No cards

Owned by you

USAGE OVERVIEW

3 Cards

Owned by you

Boards shared with you

Card source data

12345

Card preview

Card information

### Create Line chart Card

Enter title and description of the card

Title

Line chart

Color scheme

A line chart to display time series information with historic and live data

Back

Submit

Step 38: Repeat the same process again to get the Humidity graph.

The screenshot shows the IBM Watson IoT Platform interface. On the left, a sidebar contains icons for various functions. The main area displays a 'board\_test' dashboard with a 'Line chart' card. A 'Create Gauge Card' dialog is open, showing options to specify the data source. The 'Devices' tab is selected, and a table lists two devices: 12345 (Testdevicetype) and 14325 (Testdevicetype). A 'Next' button is visible at the bottom right of the dialog.

IBM Watson IoT Platform

board\_test

Card source data

12345

Card preview

Card information

Create Gauge Card

Specify the data source for the card

Devices

Search for card data sources using the filter:

Device ID Device Type

☒ 12345 Testdevicetype

☐ 14325 Testdevicetype

Next

Step 39: Here is the Final graph.

The screenshot shows the IBM Watson IoT Platform interface. The main area displays a 'board\_test' dashboard. On the left, a 'Gauge' card shows a value of 80.0%. On the right, a 'Line chart' card shows a graph of temperature data over time, with a 'now' button. A status bar at the bottom indicates '1 Simulation running'.

IBM Watson IoT Platform

board\_test

Gauge

80.0 %

Line chart

5 minutes

now

1 Simulation running

**Result:**

An IBM Watson cloud for IoT and a device is created successfully.