

# SENDING DATA FROM RASPBERRY-PI TO IBM WATSON

Date	31 October 2022
Team ID	PNT2022TMID27080
Project Name	Gas leakage monitoring and alerting system for industries

## AIM:

To send sensor data (or any dummy data) from Raspberry –Pi to IBM Watson .In our case it is DHT sensors Data.

## REQUIREMENTS:

### HARDWARE:

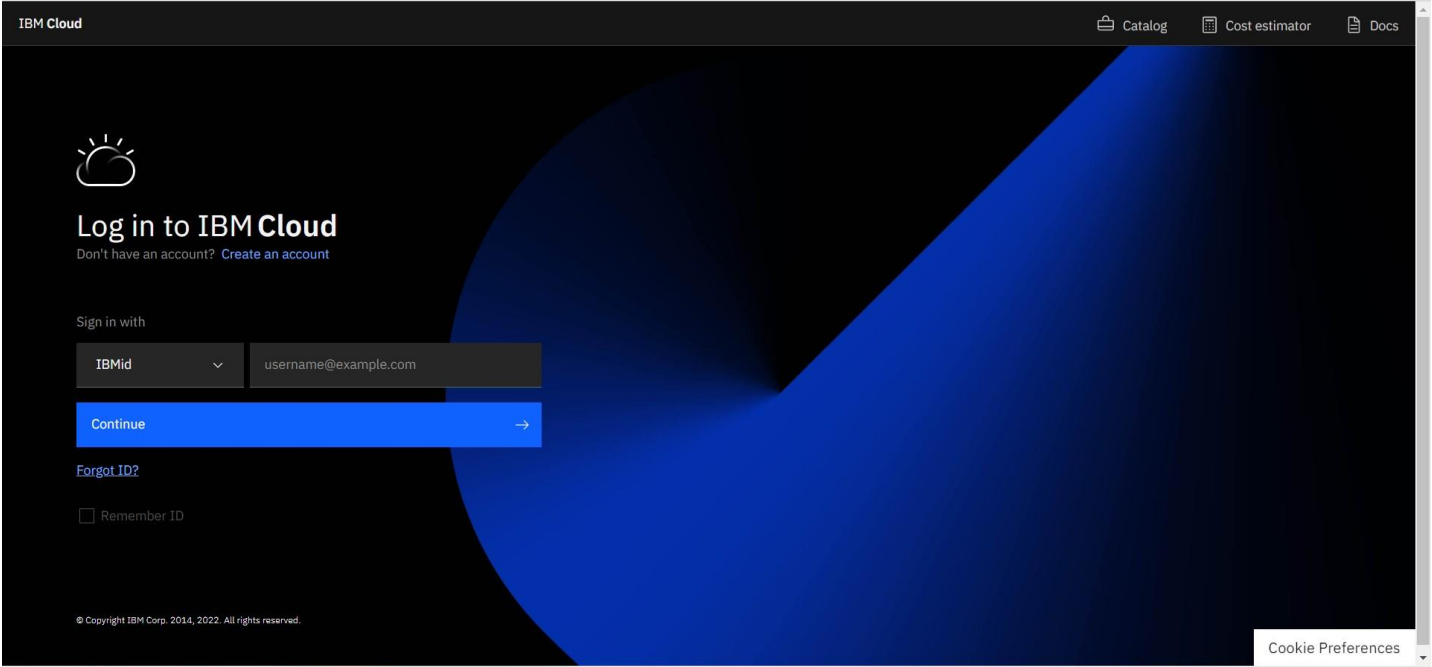
- RASPBERRY-PI (3B)(WITH ETHERNET CABLE OR WIFI CONNECTED)
- USB MOUSE
- USB KEYBOARD
- VGA TO HDMI CABLE
- A MONITOR
- RASPBERRY’S POWER SUPPLY
- DHT-11 Sensor
- Connecting Wires

### SOFTWARE:

- IBM BLUEMIX ACCOUNT

# STEPS TO BE FOLLOWED

Step-1: Open IBM cloud and login into your account



➤ Click on catalog on your dashboard screen, then under platform go IoT.

IBM Cloud

Search resources and products...

Q Catalog Manage ▾ SANJAI KUMAR V's Ac...

?

Dashboard ▾

Edit dashboard Upgrade account Create resource +

For you

Select an option ▾

Build

Explore IBM Cloud with this selection of easy starter tutorials and services.

Explore IBM Cloud Shell

Try a command-driven approach for creating, developing, and deploying a web project.

Getting started 2 min

Create and deploy an application

Browse our starter kits, and then select one to jump start the process to create and deploy your app.

Getting started 5 min

Visit the IBM Cloud catalog

Explore our unique product catalog that contains 190+ services and software for your business solutions.

Getting started 1 min

Build a web app with Watson Speech to Text

Deploy a conversational interface compatible with any application, device, or channel.

Getting started 15 min

Get started with Watson Discovery

Get up to speed on Watson Discovery with step-by-step tutorials, deep-dive videos, and complete examples of working code.

Recommended 2 hr

News

View all

Unified Key Orchestrator Now Supports Easy Multicloud Key Management for Google KMS

TrustRadius Best Software: Five IBM Offerings to Make the List

Recent support cases

View all

Planned maintenance

View all

IBM Cloud status

View all

https://cloud.ibm.com/catalog IBM Cloud Pak for Network

- Check all details and click on create.

IBM Cloud

Search resources and products...

Q

Catalog

Manage

SANJAI KUMAR V's Ac...

?

Search the catalog...

Sell on IBM Cloud

Catalog settings

Recommended products (5)

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)

Security (25)

Mobile (1)

Type

All

**Analytics Engine**  
By IBM

Submit your Apache Spark applications as needed and customize the Spark runtimes to satisfy the requirements of your application.

Lite • Free • HIPAA Enabled • IAM-enabled • Service Endpoint Supported • IBM supported

**AnonTech ViziVault Platform**  
By Anon Technology, Inc.

Manage personal information as-a-service safely, securely, and in compliance with data privacy regulations using ViziVault

Lite • Free • HIPAA Enabled • IAM-enabled • Third party supported

**API Connect**  
By IBM

An enterprise-grade platform for creating, securing, managing, sharing, monetizing, and analyzing custom APIs located on-premises and on the cloud.

Lite • Free • EU Supported • IAM-enabled • IBM supported

**App Configuration**  
By IBM

Centralized, in-flight configuration for web and mobile applications and distributed environments.

Lite • Free • IAM-enabled • Service Endpoint Supported • IBM supported

**App Connect**  
By IBM

Connect your applications, automate tasks, and improve productivity

Lite • Free • IBM supported

**App ID**  
By IBM

User Authentication and User Profiles for your apps.

Lite • Free • EU Supported • Financial Services Validated • HIPAA Enabled • IAM-enabled • IBM supported

**Bare Metal Servers for Classic**

**Bare Metal Servers for VPC**

**Block Storage**

- Tick agreements and then click on create.

IBM Cloud

Search resources and products...

Q

Catalog

Manage

SANJAI KUMAR V's Ac...

?

Catalog /

# 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

Last updated

08/15/2022

Category

Internet of Things

Compliance

IAM-enabled

Location

Frankfurt

London

Dallas

Washington DC

Related links

Docs

Select a location

Frankfurt (eu-de)

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	Free

Summary

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

Location: Frankfurt

Plan: Lite

Service name: Internet of Things Platform-yb

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

## ➤ Click launch

IBM Cloud Search resources and products...

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.

## ➤ Login into IBM Watson IOT platform

IBM Watson IoT Platform Sign in

Collect data from

Cars

and make value from it

Learn More

## ➤ login into your IBM-Bluemix account with your e-mail ID and Password.



## 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](#)

[Contact](#) [Privacy](#) [Terms of use](#) [Accessibility](#) [Cookie preferences](#)

Powered by IBM Security Verify



## Log in to IBM

Logging in as 310819106071@smartinternz.com Not you?

Password

[Forgot password?](#)

☐ Remember me ⓘ

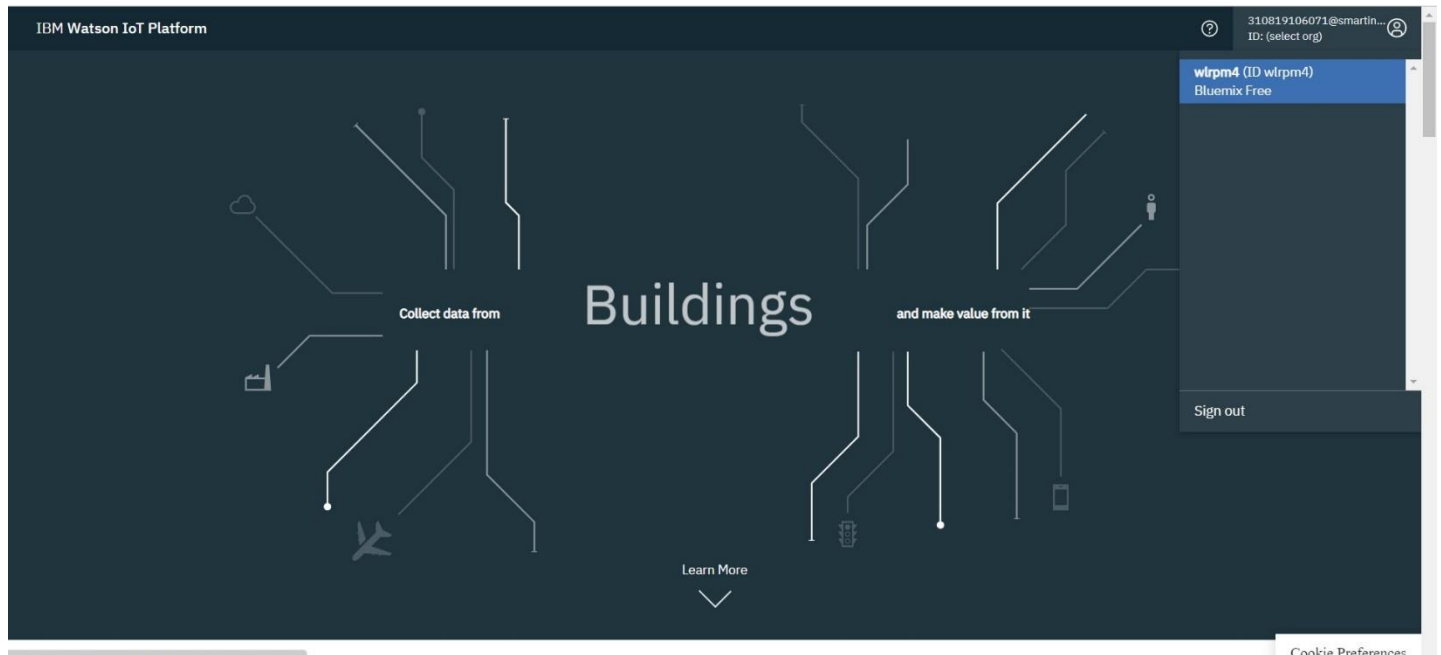
Log in →

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

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

[Contact](#) [Privacy](#) [Terms of use](#) [Accessibility](#) [Cookie preferences](#)

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- Dashboard of IBM Watson IoT platform
- Click on Add device

The image shows the "Browse Devices" page in the IBM Watson IoT Platform. The header includes the logo and a user profile with the email 310819106071@smartint... and ID: wlrpm4. The main content area has a "Browse" tab selected, with sub-tabs for "Action", "Device Types", and "Interfaces". A "Add Device" button is in the top right. Below the tabs, there's a "Browse Devices" section with "All Devices" and "Diagnose" buttons. A descriptive text explains that the table shows a summary of all devices that have been added. Below this is a table with columns: Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. The table contains two rows of data. At the bottom, there's a "Device Simulator" toggle and a "1 Simulation running" status.

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
> <input type="checkbox"/>	12345	Disconnected	Testdevicetype	Device	Nov 5, 2022 1:04 PM	
> <input type="checkbox"/>	14325	Disconnected	Testdevicetype	Device	Nov 5, 2022 5:33 AM	

Items per page 50 | 1-2 of 2 Items

1 of 1 page

1 Simulation running

➤ After click on Add device this page will open

The screenshot shows the IBM Watson IoT Platform interface. At the top, the header bar displays 'IBM Watson IoT Platform' on the left, a help icon and user information '310819106071@smartinternz.com ID: wlrpm4' on the right, and a navigation menu with 'Browse', 'Action', 'Device Types', and 'Interfaces'. A dark sidebar on the left contains various icons. The main content area features a modal dialog titled 'Add Device' with a close button (X) in the top right corner. The dialog has a progress bar with four steps: 'Identity' (active), 'Device Information', 'Security', and 'Summary'. Below the progress bar, a text prompt reads: '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 the placeholder text 'Select or create a device type...' and 'Device ID' with the placeholder text 'Enter Device ID'. At the bottom right of the dialog are 'Cancel' and 'Next' buttons. Below the dialog, the 'Browse Devices' section is visible, showing tabs for 'All Devices' and 'Diagnose', and a status box indicating '1 Simulation running'.

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

Browse Action Device Types Interfaces

### Add Device

Identity Device Information Security Summary

Select a device type for the device that you are adding and give the device a unique ID.

Device Type Select or create a device type...

Device ID Enter Device ID

Cancel Next

### Browse Devices

All Devices Diagnose

1 Simulation running



- Go to device type and fill the details.

IBM Watson IoT Platform

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ID: wlrpm4

BrowseActionDevice TypesInterfaces

Add Type

Identity

Device Information

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.

Type

DeviceOrGateway

Name

TestdeviceTy

The device type name is used to identify the device type uniquely and uses a restricted set of characters to make it suitable for API use.

Description

Cancel

Next

Device Types

1 Simulation running

- Click on Finish

IBM Watson IoT Platform

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ID: wlrpm4

BrowseActionDevice TypesInterfaces

Add Type

Identity

Device Information

These attributes will be used as a template for new devices that are assigned this device type

Edit Metadata

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

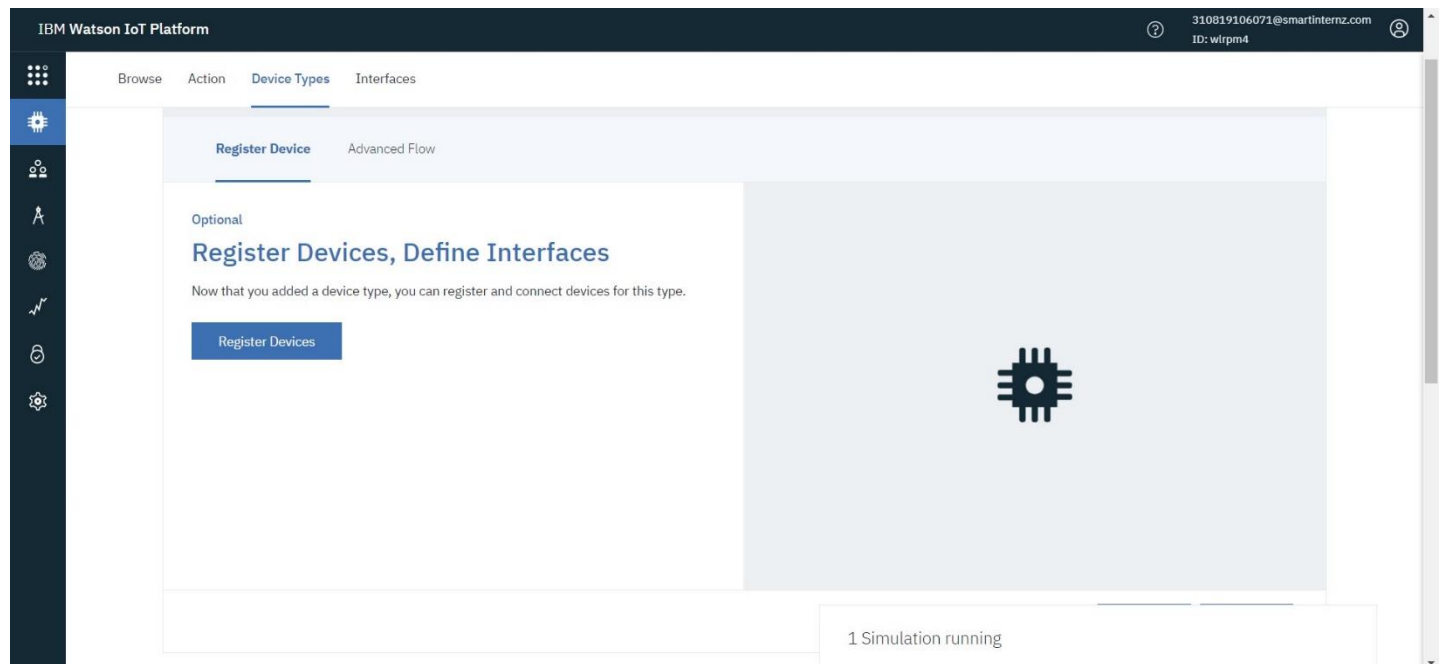
Back

Finish

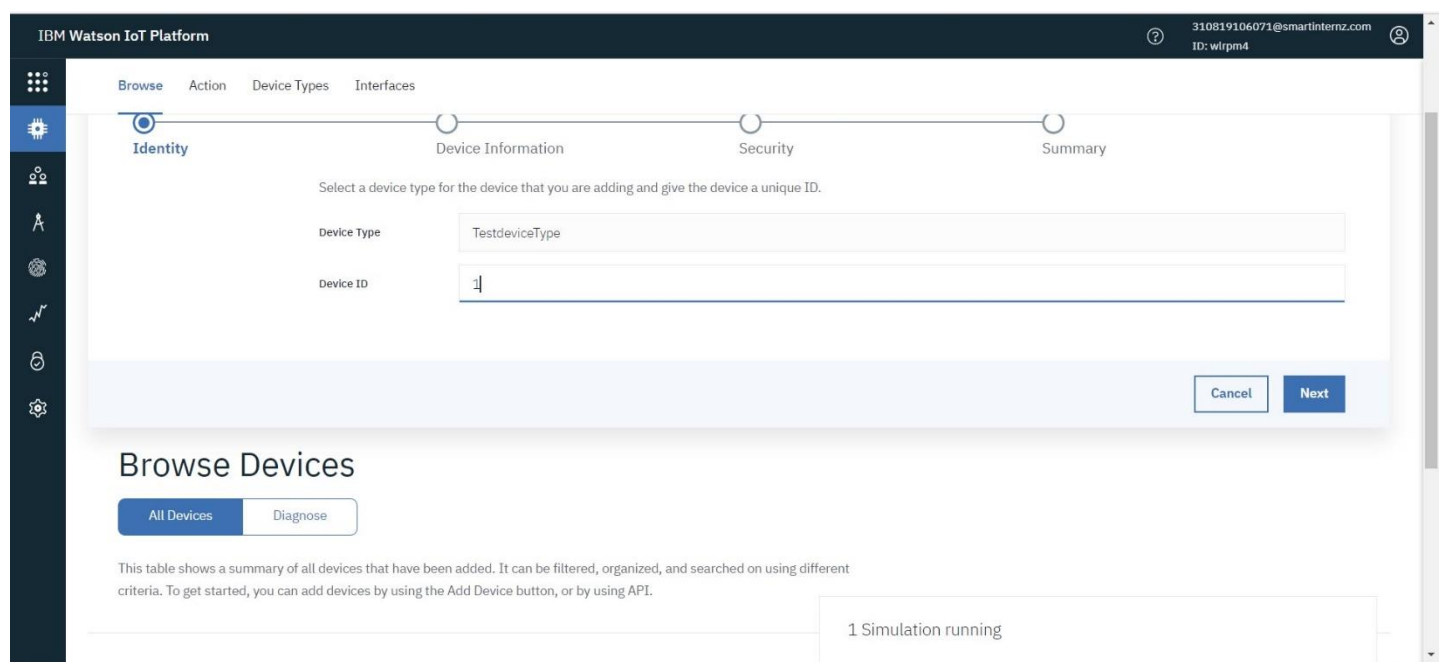
Device Types

1 Simulation running

➤ Click on Register Device.



➤ Choose the device and give device ID and then click on next.



➤ Click on Next

IBM Watson IoT Platform

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ID: wlrpm4

BrowseActionDevice TypesInterfaces

Add Device

Identity

Device Information

Security

Summary

You can modify the default device information and enter more information about the device for identification purposes.

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

Add Metadata

Back

Next

➤ Click on Next

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

BrowseActionDevice TypesInterfaces

characters and symbols. The token is returned to you at the end of the device registration process.

can include hyphens, underscores, and periods. Do not use repeated characters, dictionary words, user names, or other predefined sequences.

Authentication Token

Enter an optional token

Make a note of the generated token. Lost authentication tokens cannot be recovered. Tokens are encrypted before being stored.

Authentication token are encrypted before we store them.

Back

Next

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.

1 Simulation running

➤ Click on Finish

IBM Watson IoT Platform

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ID: wlrpm4

Browse Action Device Types Interfaces

## Add Device

Identity Device Information Security Summary

Verify that the following information is correct then select Finish

Device Type  
TestdeviceType

Device ID  
12345

[View Metadata](#)

Security Token  
To be generated

[Back](#) [Finish](#)

Browse Devices

1 Simulation running

➤ Device is created

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"/>	12345	Disconnected	TestdeviceType	Device	Nov 7, 2022 4:35 AM	
> <input type="checkbox"/>	12345	Disconnected	Testdevicetype	Device	Nov 5, 2022 1:04 PM	
> <input type="checkbox"/>	14325	Disconnected	Testdevicetype	Device	Nov 5, 2022 5:33 AM	

Items per page 50 | 1-3 of 3 items

1 of 1 page

1 Simulation running

## STEP-2: INSTALLING NECESSARY PACKAGES ON YOUR PI:

- Now we are going to install necessary packages on your pi.
- Open your terminal in your pi and type the following commands
- `curl -LO https://github.com/ibm-messaging/iot-raspberrypi/releases/download/1.0.2.1/iot_1.0-2_armhf.deb`
- `sudo dpkg -i iot_1.0-2_armhf.deb`
- `service iot status`

Following are the images as to what appears on your pi's terminal when u type these commands

```
File Edit Tabs Help
--2017-10-23 06:55:22-- http://ftp.nl.debian.org/debian/pool/main/o/openssl/libssl1.0.0_1.0.1t-1-deb8u6_armhf.deb
Resolving ftp.nl.debian.org (ftp.nl.debian.org)... 130.89.149.21, 2001:67c:2564:a120::21
Connecting to ftp.nl.debian.org (ftp.nl.debian.org)[130.89.149.21]:80... connect
ed.
HTTP request sent, awaiting response... 200 OK
Length: 867950 (848K) [application/x-debian-package]
Saving to: 'libssl1.0.0_1.0.1t-1-deb8u6_armhf.deb'

libssl1.0.0_1.0.1t- 100%[=====] 847.61K  358KB/s   in 2.4s

2017-10-23 06:55:25 (358 KB/s) - 'libssl1.0.0_1.0.1t-1-deb8u6_armhf.deb' saved [
867950/867950]

pi@raspberrypi:~$ sudo dpkg -i libssl1.0.0_1.0.1t-1-deb8u6_armhf.deb
Selecting previously unselected package libssl1.0.0:armhf.
(Reading database ... 115686 files and directories currently installed.)
Preparing to unpack libssl1.0.0_1.0.1t-1-deb8u6_armhf.deb ...
Unpacking libssl1.0.0:armhf (1.0.1t-1-deb8u6) ...
Setting up libssl1.0.0:armhf (1.0.1t-1-deb8u6) ...
pi@raspberrypi:~$ curl -LO https://github.com/ibm-messaging/iot-raspberrypi/rel
eases/download/1.0.2.1/iot_1.0-2_armhf.deb
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           % Done                   Dload  Upload   Total    Spent    Left  Speed
100 164  0 164  0  0 157  0 --:--: 0:00:01 --:--: 157
100 609  0 609  0  0 457  0 --:--: 0:00:01 --:--: 457
100 110k 100 110k  0  0 20117  0 0:00:03 0:00:03 --:--: 48190
pi@raspberrypi:~$ sudo dpkg -i iot_1.0-2_armhf.deb
(Reading database ... 115626 files and directories currently installed.)
Preparing to unpack iot_1.0-2_armhf.deb ...
Unpacking iot (1.0-1) over (1.0-1) ...
Setting up iot (1.0-1) ...
Processing triggers for systemd (232-25-deb9u1) ...
pi@raspberrypi:~$ service iot status
* iot.service - LSB: IoT service
   Loaded: loaded (/etc/init.d/iot; generated; vendor preset: enabled)
   Active: active (running) since Mon 2017-10-23 06:56:25 UTC; 17s ago
   Docs: man:systemd-sysv-generator(8)
   CGroup: /system.slice/iot.service
           └─2562 /opt/iot/iot /dev/null

Oct 23 06:56:24 raspberrypi systemd[1]: Starting LSB: IoT service...
Oct 23 06:56:24 raspberrypi iot[2562]: Starting the iot program
Oct 23 06:56:25 raspberrypi iot[2562]: **** IoT Raspberry Pi Sample has started ****
Oct 23 06:56:25 raspberrypi iot[2562]: Config file not found. Going to Quickstart mode
Oct 23 06:56:25 raspberrypi iot[2562]: Running in Quickstart mode
Oct 23 06:56:25 raspberrypi systemd[1]: Started LSB: IoT service.
```

- Then open your terminal and type `pip install ibmiotf`

```
File Edit Tabs Help
pi@raspberrypi:~$ pip install ibmiotf
Collecting ibmiotf
  Downloading ibmiotf-0.3.0.tar.gz (58kB)
    100% |#####| 61kB 510kB/s
Collecting dicttoxml>=1.7.4 (from ibmiotf)
  Downloading dicttoxml-1.7.4.tar.gz
Collecting iso8601>=0.1.10 (from ibmiotf)
  Downloading iso8601-0.1.12-py2.py3-none-any.whl
Collecting paho-mqtt>=1.2 (from ibmiotf)
  Downloading paho-mqtt-1.3.1.tar.gz (80kB)
    100% |#####| 81kB 916kB/s
Collecting pytz>=2014.7 (from ibmiotf)
  Using cached pytz-2017.2-py2.py3-none-any.whl
Collecting requests>=2.5.0 (from ibmiotf)
  Downloading requests-2.18.4-py2.py3-none-any.whl (88kB)
    100% |#####| 92kB 1.6MB/s
Collecting requests_toolbelt>=0.7.0 (from ibmiotf)
  Downloading requests_toolbelt-0.8.0-py2.py3-none-any.whl (54kB)
    100% |#####| 61kB 1.6MB/s
Collecting xmldict>=0.10.2 (from ibmiotf)
  Downloading xmldict-0.11.0-py2.py3-none-any.whl
Collecting urllib3<1.23,>=1.21.1 (from requests>=2.5.0->ibmiotf)
  Downloading urllib3-1.22-py2.py3-none-any.whl (122kB)
    100% |#####| 133kB 1.4MB/s
Collecting idna<2.7,>=2.5 (from requests>=2.5.0->ibmiotf)
  Downloading idna-2.6-py2.py3-none-any.whl (56kB)
    100% |#####| 61kB 1.7MB/s
Collecting chardet<3.1.0,>=3.0.2 (from requests>=2.5.0->ibmiotf)
  Downloading chardet-3.0.4-py2.py3-none-any.whl (133kB)
    100% |#####| 143kB 1.6MB/s
Collecting certifi>=2017.4.17 (from requests>=2.5.0->ibmiotf)
  Using cached certifi-2017.7.27.1-py2.py3-none-any.whl
Building wheels for collected packages: ibmiotf, dicttoxml, paho-mqtt
Running setup.py bdist_wheel for ibmiotf ... done
Stored in directory: /home/pi/.cache/pip/wheels/45/f9/45/bbc33ad957e82f7b71ba80e31d6d5a83d9d735a6d12e0c9418
Running setup.py bdist_wheel for dicttoxml ... done
Stored in directory: /home/pi/.cache/pip/wheels/20/d8/0d/acc8f289011b7be7de71deebe642f683be0313dfff0493
Successfully built ibmiotf dicttoxml paho-mqtt
Installing collected packages: dicttoxml, iso8601, paho-mqtt, pytz, urllib3, idna, chardet, certifi, requests, requests-toolbelt, xmldict, ibmiotf
Successfully installed certifi-2017.7.27.1 chardet-3.0.4 dicttoxml-1.7.4 ibmiotf-0.3.0 idna-2.6 iso8601-0.1.12 paho-mqtt-1.3.1 pytz-2017.2 requests-2.18.4 requests-toolbelt-0.8.0 urllib3-1.22 xmldict-0.11.0
pi@raspberrypi:~$
```

- ```
File Edit Shell Debug Options Window Help
Python 2.7.13 (default, Jan 19 2017, 14:48:08)
[GCC 6.3.0 20170124] on linux2
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: /home/pi/Downloads/dhtlltoibmiot.py =====
2017-10-23 07:10:37.768 ibmiotf.device.Client INFO Connected successfully: d:gegt14:mydevice:mydevice
Published Temperature = 28 C Humidity = 50 % to IBM Watson
SensorData Invalid
Published Temperature = 28 C Humidity = 50 % to IBM Watson
SensorData Invalid
Published Temperature = 28 C Humidity = 50 % to IBM Watson
SensorData Invalid
Published Temperature = 28 C Humidity = 50 % to IBM Watson
Published Temperature = 29 C Humidity = 50 % to IBM Watson
Published Temperature = 29 C Humidity = 50 % to IBM Watson
|
```

- After you have sent your sensors data you can check whether it is received at your iot platform. Just look at the image below and if u see the same wifi kind of symbol on your created device then your data is being received.

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.

Q

Search by Device ID

Device Simulator

|   | Device ID | Status       | Device Type    | Class ID | Date Added          | Descriptive Location |
|---|-----------|--------------|----------------|----------|---------------------|----------------------|
| > | 12345     | Disconnected | TestdeviceType | Device   | Nov 7, 2022 4:35 AM |                      |
| > | 12345     | Disconnected | Testdevicetype | Device   | Nov 5, 2022 1:04 PM |                      |
| > | 14325     | Disconnected | Testdevicetype | Device   | Nov 5, 2022 5:33 AM |                      |

Items per page 50 | 1-3 of 3 items

1 Simulation running

- After double clicking on your created device you can see the received data as shown in image

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area shows a table of devices with columns: Device ID, Status, Device Type, Class ID, Date Added, and Descriptive Location. The selected device (ID 12345) is shown in a detailed view with tabs for Identity, Device Information, Recent Events, State, and Logs. The 'Recent Events' tab is active, showing a table of events with columns: Event, Value, Format, and Last Received. The events are listed as 'event\_test' with various JSON payloads. A status bar at the bottom indicates '1 Simulation running'.

| Event      | Value                                                | Format | Last Received     |
|------------|------------------------------------------------------|--------|-------------------|
| event_test | {"temperature":42,"humidity":28,"hazardous gas..."}  | json   | a few seconds ago |
| event_test | {"temperature":16,"humidity":24,"hazardous gas..."}  | json   | a few seconds ago |
| event_test | {"temperature":42,"humidity":41,"hazardous gas..."}  | json   | a few seconds ago |
| event_test | {"temperature":14,"humidity":81,"hazardous gas..."}  | json   | a few seconds ago |
| event_test | {"temperature":18,"humidity":8,"hazardous gas":..."} | json   | a few seconds ago |

#### Step-4: Creating boards and cards for visualization of data:

- In your Watson platform you have an option called board .Click on it and you get the following window on your screen

The screenshot displays the IBM Watson IoT Platform interface, specifically the 'Your boards' section. The top navigation bar includes 'Your boards' and 'Public boards'. The main content area shows a list of boards with columns: Board Name, Cards, and Owned by you. The boards listed are 'RISK AND SECURITY OVERVIEW' (4 Cards) and 'USAGE OVERVIEW' (3 Cards). A large dashed box with a plus sign indicates a new board can be created. A status bar at the bottom indicates '1 Simulation running'.

| Board Name                 | Cards   | Owned by you |
|----------------------------|---------|--------------|
| RISK AND SECURITY OVERVIEW | 4 Cards | Owned by you |
| USAGE OVERVIEW             | 3 Cards | Owned by you |

- Click on Create a new board to create a board .

The given below window appears give a name and description to your board as shown in the window below.

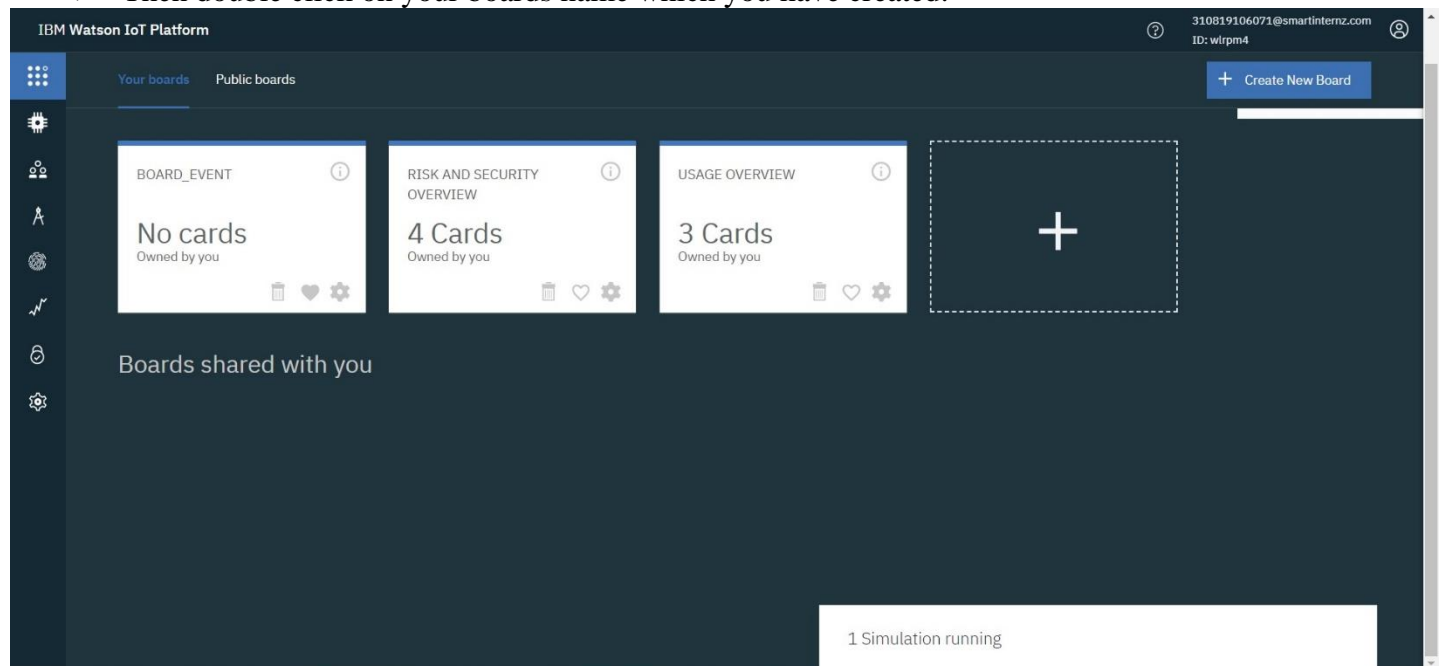
The screenshot shows the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons. The main area displays 'Your boards' with a card titled 'RISK AND SECURITY OVERVIEW' showing '4 Cards Owned by you'. A modal dialog titled 'Create a new board' is open in the center. It prompts the user to 'Provide a name and description for your new board.' and includes input fields for 'Board name' and 'Description'. Below these fields are two radio button options: 'Make this board my landing page.' and 'Favorite (this also adds this board to your navbar)'. A 'Next' button is located at the bottom right of the dialog. The background interface shows a top navigation bar with 'Your boards' and 'Public boards' tabs, and a user profile section in the top right corner.

- Then click on Next you get the below window then again click on Submit

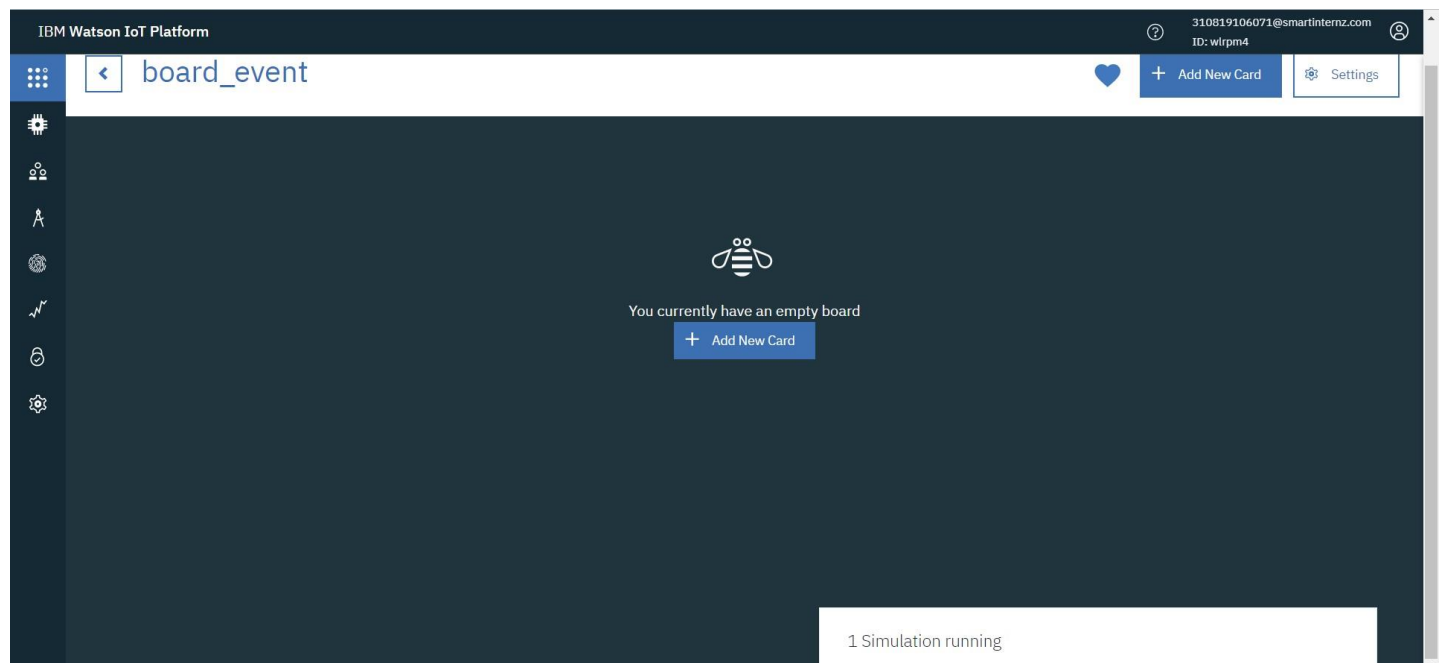
This screenshot shows the same 'Create a new board' dialog box after clicking the 'Next' button. The dialog now displays the 'Owner' as '310819106071@smartinternz.com (YOU)'. It includes a 'Members' section with a radio button option 'Share as read-only with everyone?'. Below this is a section to '+ add user ID' with a table for adding users. The table has two columns: 'Name' and 'Editor?'. At the bottom of the dialog, there are 'Back' and 'Submit' buttons. The background interface remains the same as in the previous screenshot.



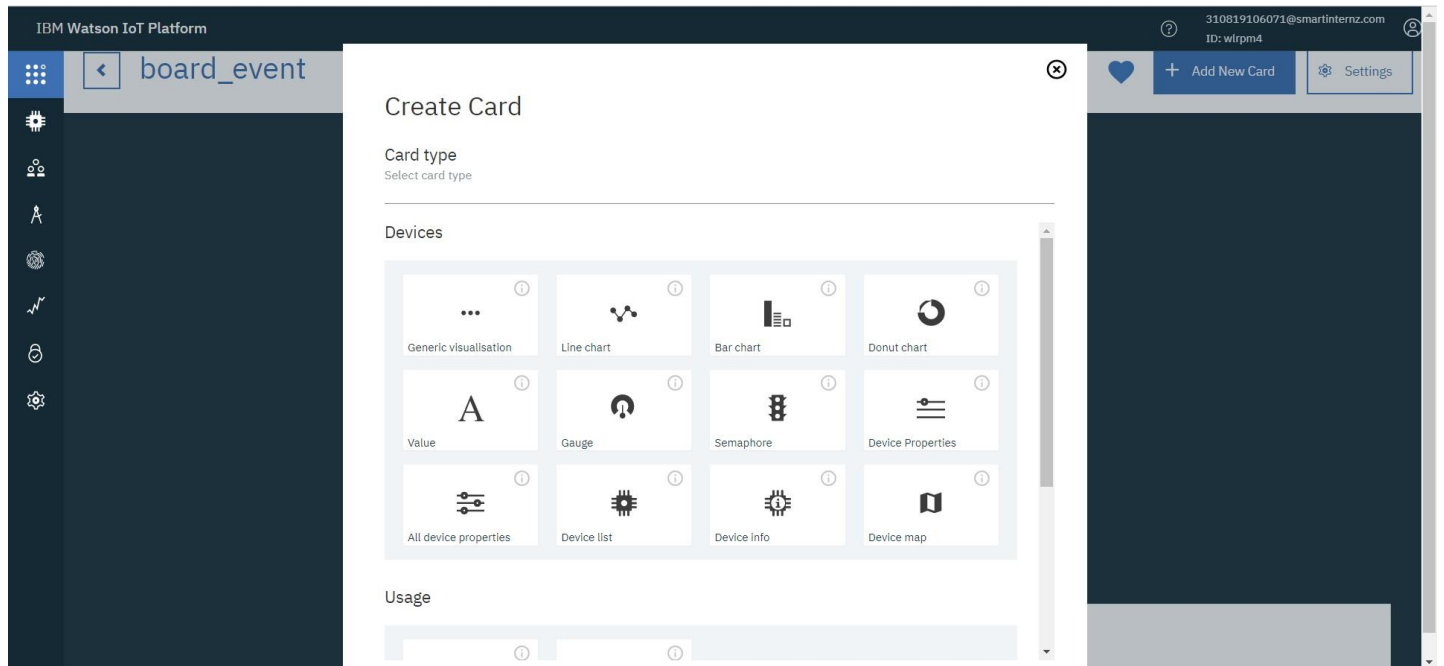
➤ Then double click on your boards name which you have created.



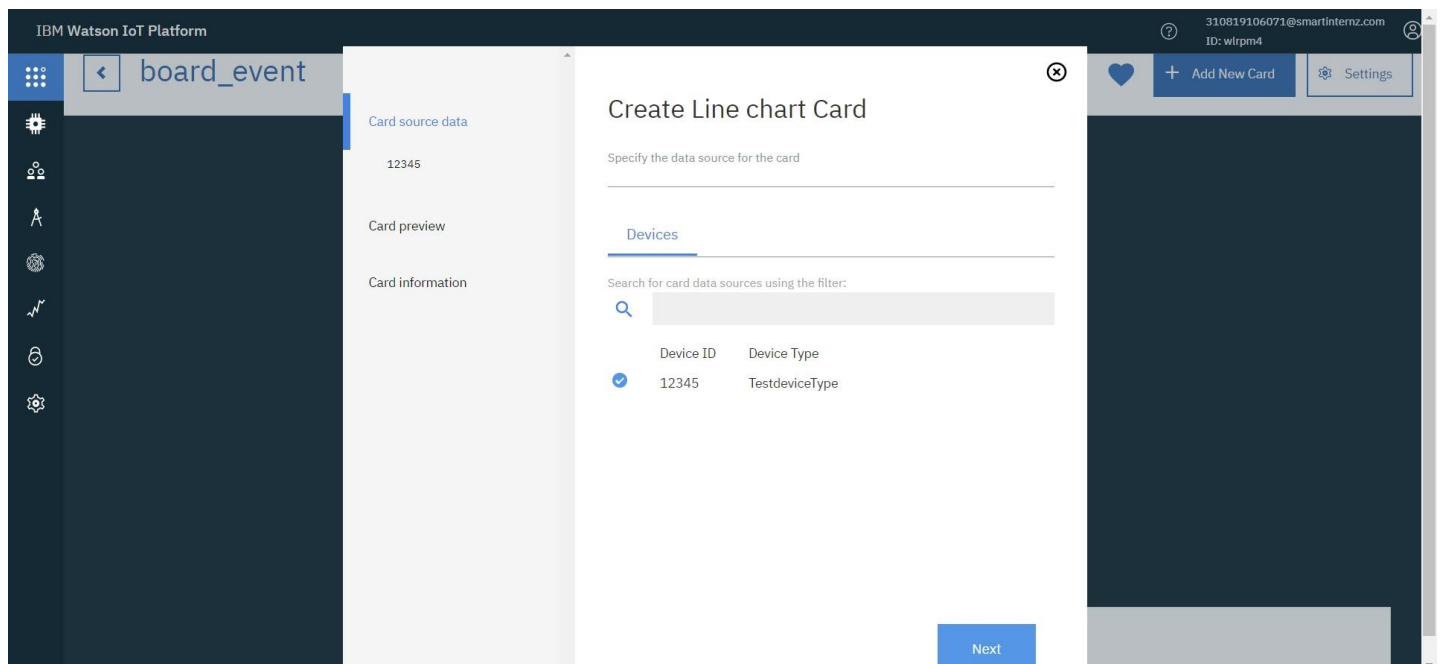
➤ Click on Add New Card



- Select the type of Graph u want accordingly and click next



- You get the below window, choose the Device and click on Next.



- Select the event, properly to be visualized on your graph and click next. In my case it is temperature

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

board\_event

Card source data

12345

Card preview

Card information

### Create Line chart Card

Connect data set

event\_test

Property

temperature

Name

temperature

Type

Number

Unit

°C

Min

0

Max

100

+ Connect new data set

Back Next

- Then select the size of the graph and color of the graph board you want and click next

IBM Watson IoT Platform

310819106071@smartinternz.com  
ID: wlrpm4

board\_event

Card source data

12345

Card preview

Card information

### Create Line chart Card

Enter title and description of the card

Title

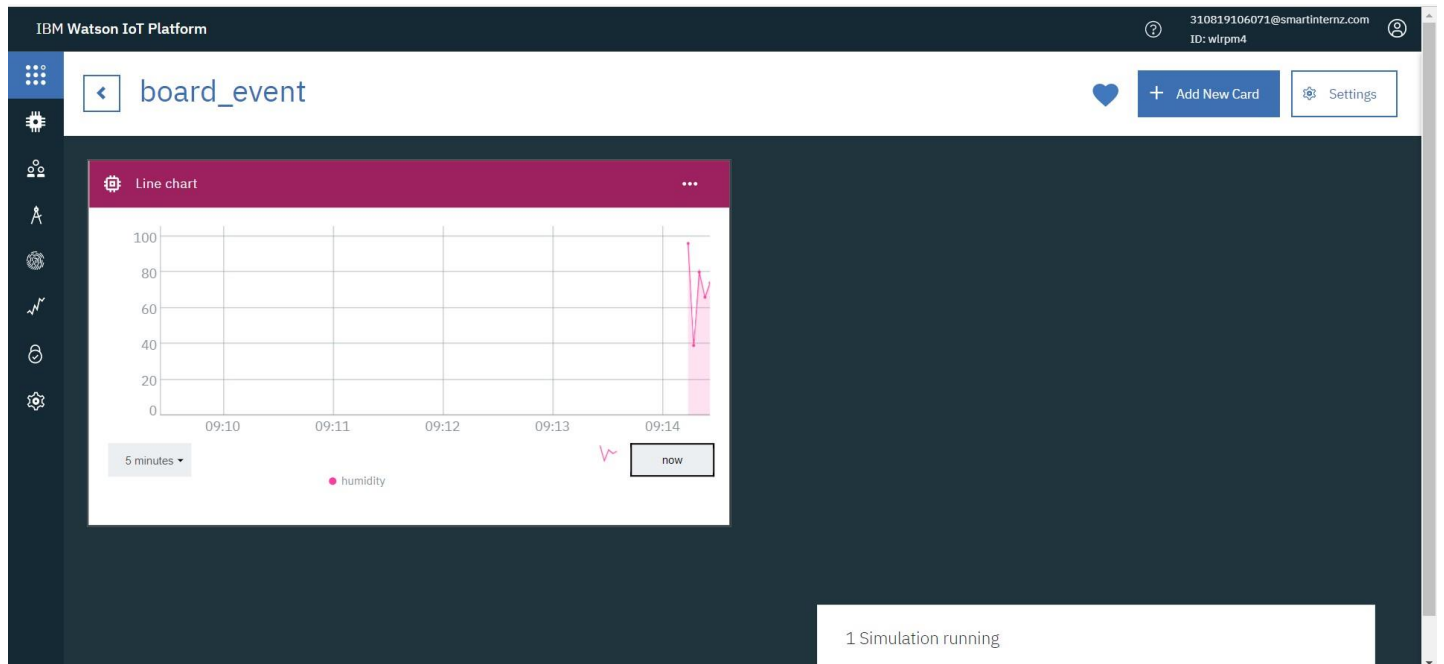
Line chart

Color scheme

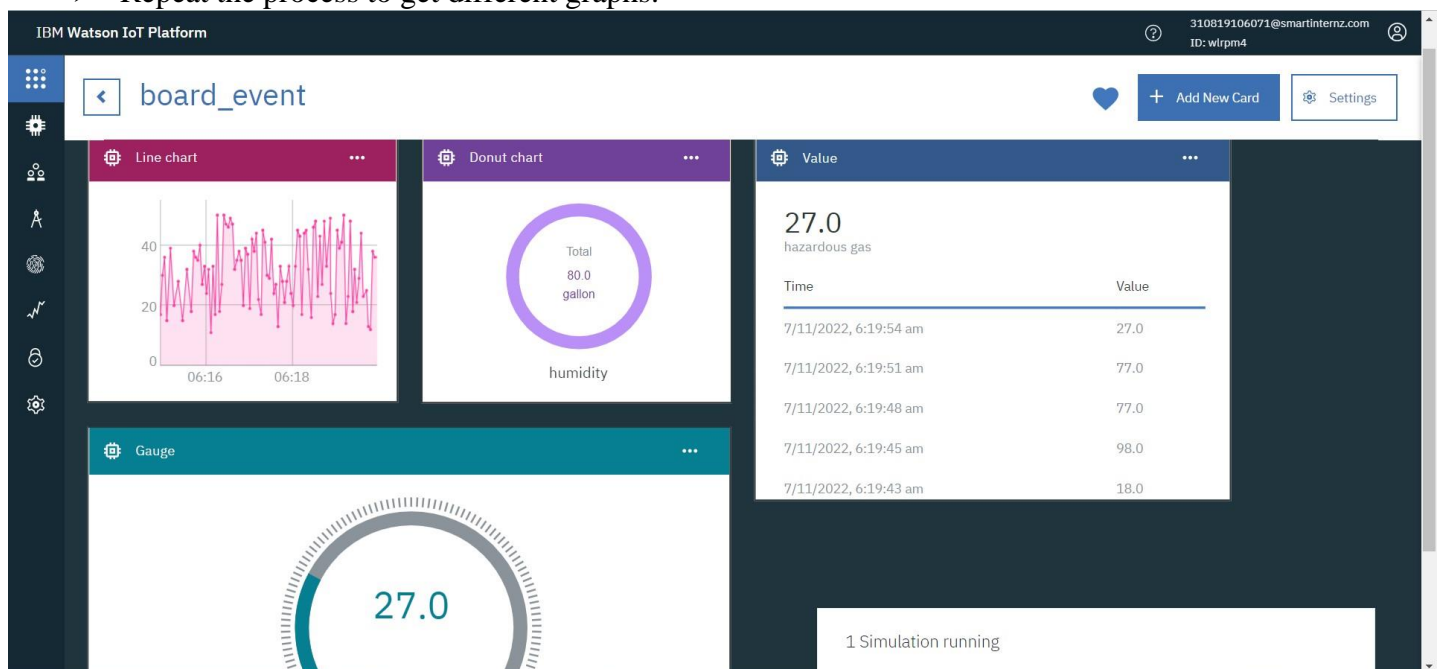
A line chart to display time series information with historic and live data

Back Submit

➤ Here is the graph



➤ Repeat the process to get different graphs.



## RESULT:

Hence, we were able to send data from our pi to IBM Watson and visualize it on a graph.

