# SENDING DATA FROM RASPBERRY-PI TO IBM WATSON

| | |
|---|---|
| Date | 18 /11/2022 |
| Team ID | PNT2022TMlD48655 |
| 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
- Connecting Wires' DHT-11 Sensor

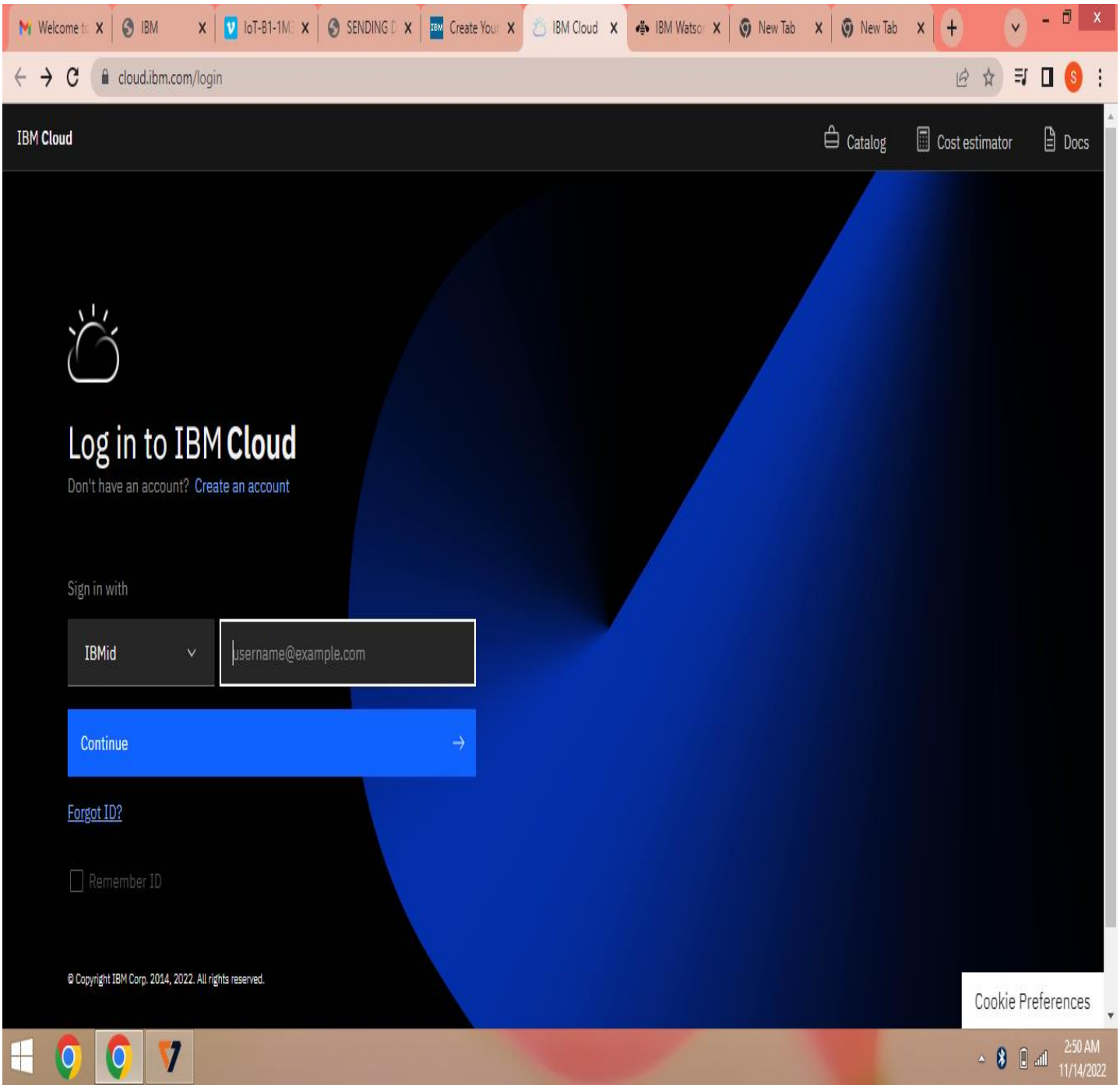
**SOFTWARE:**

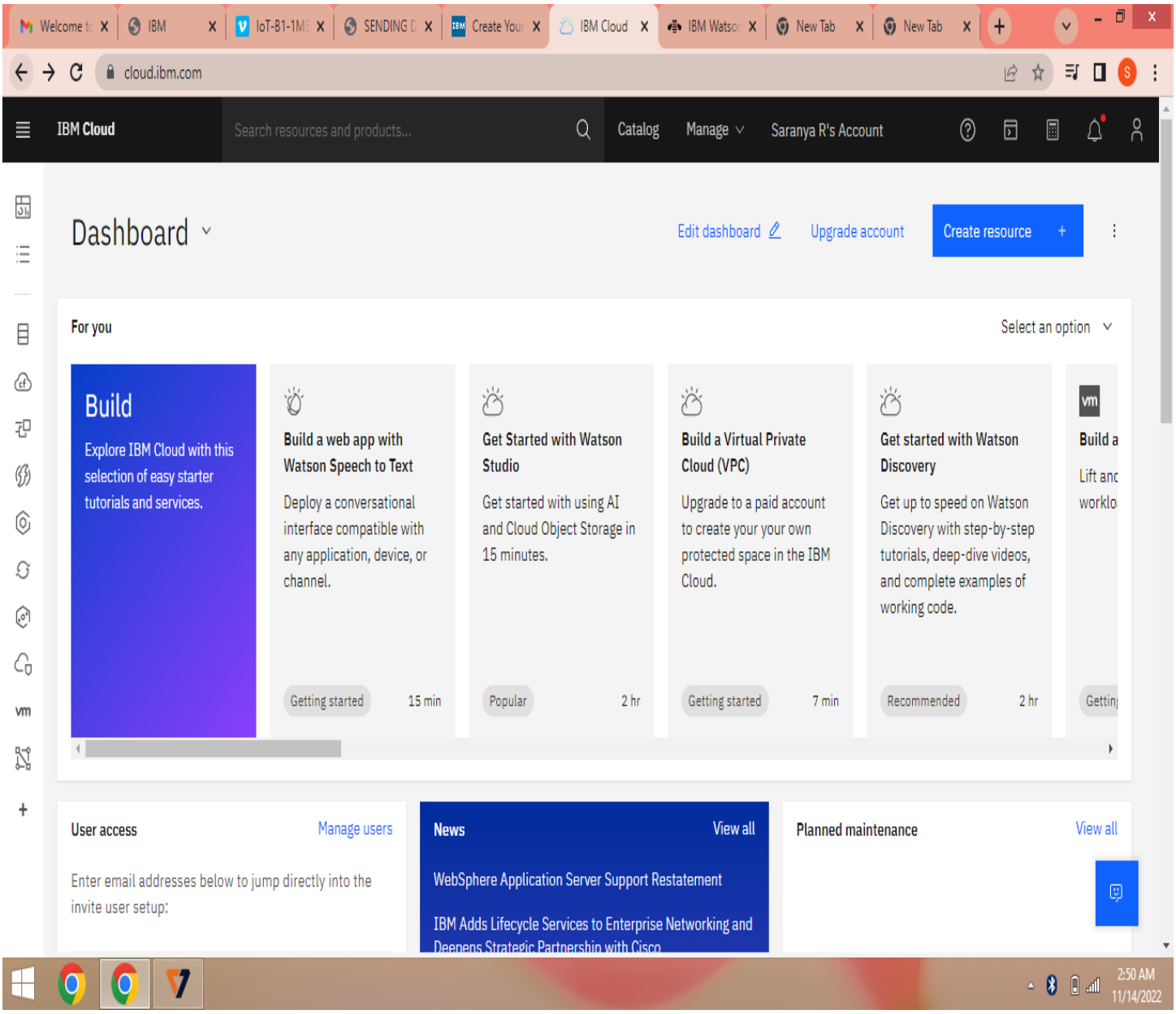
- IBM BLUEMIX ACCOUNT

## STEPS TO BE FOLLOWED

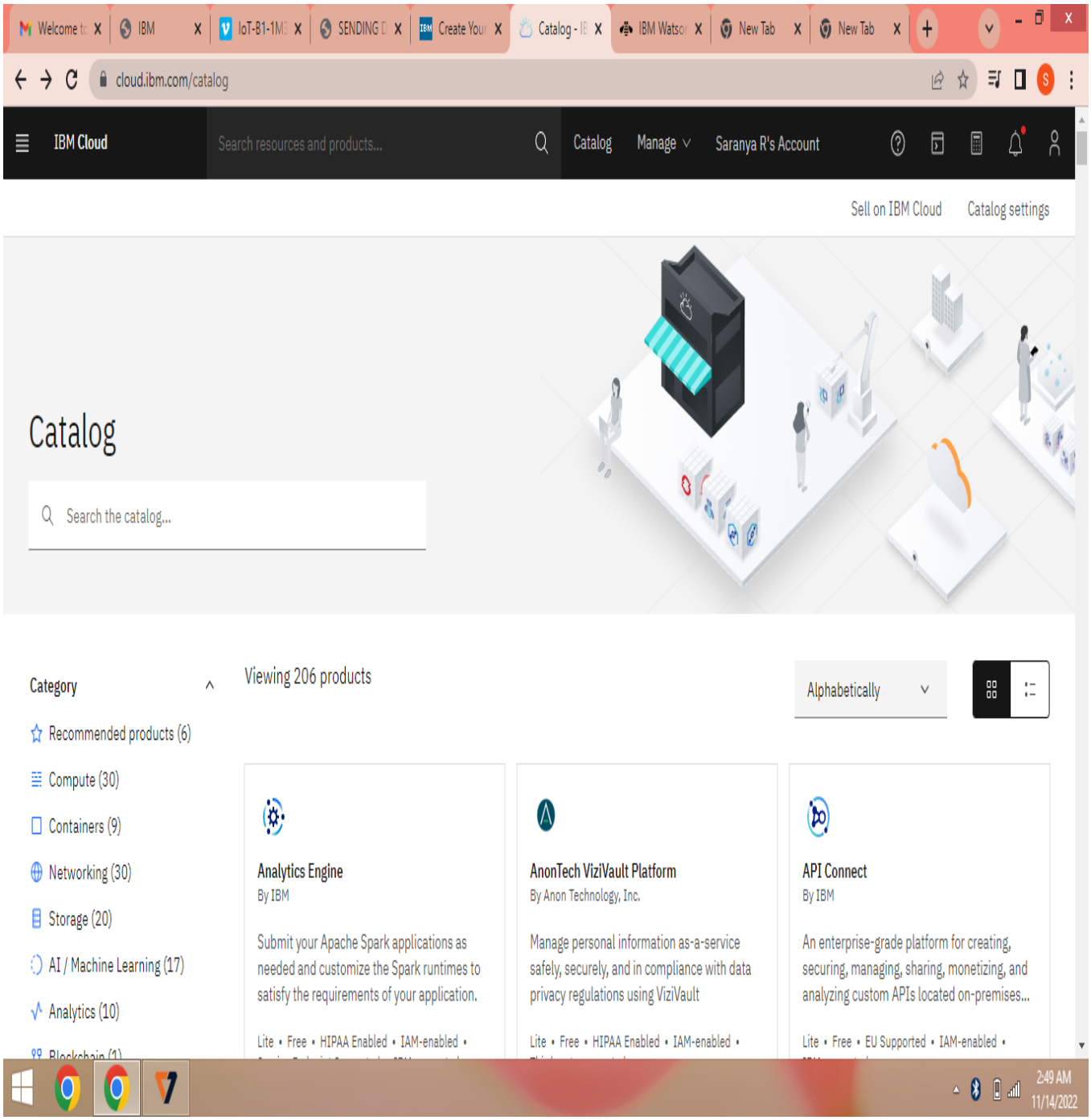
**Step-1: Create a device in IBM Watson:**

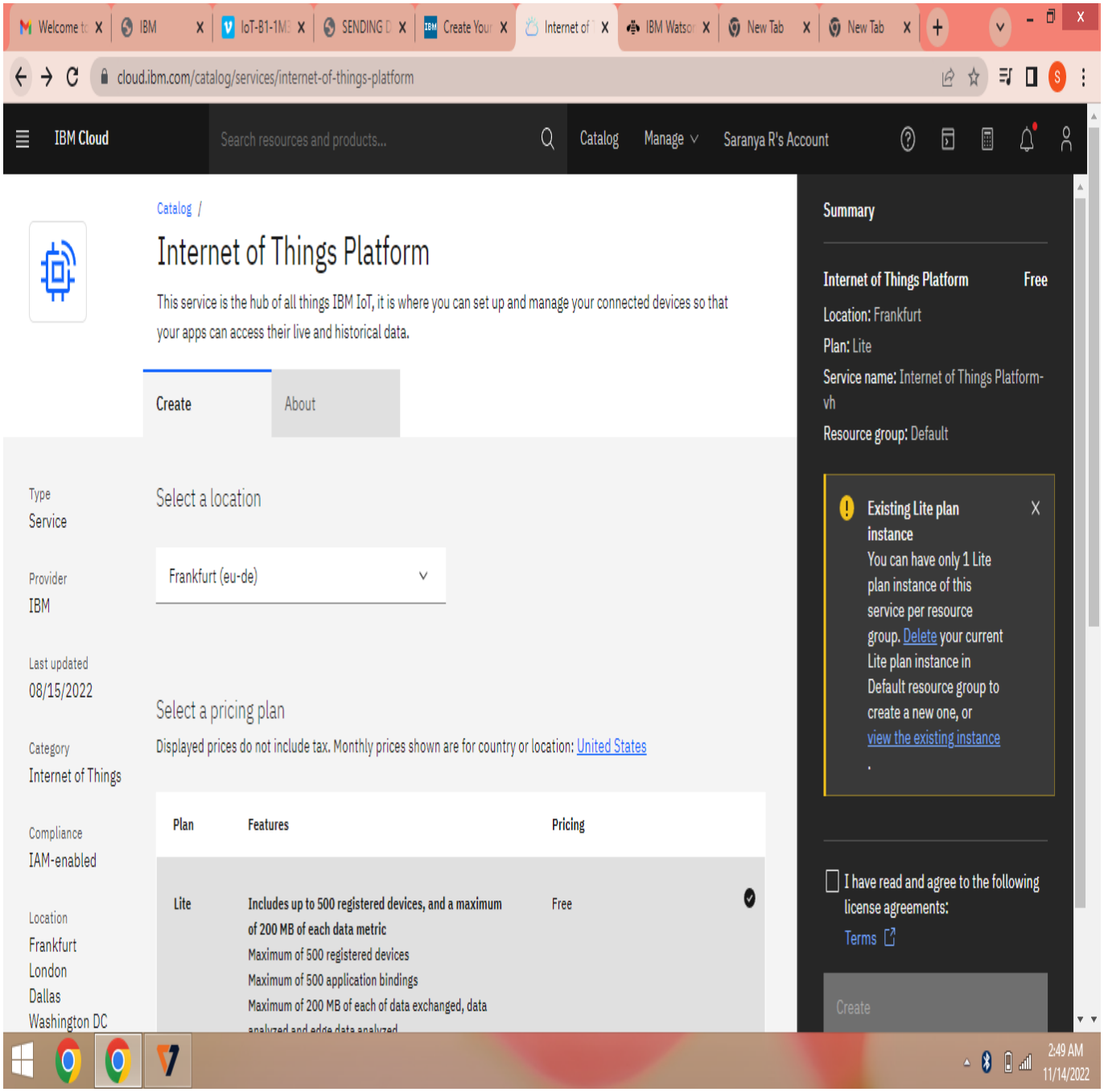
Firstly, login into your IBM-Bluemix account with your e-mail ID and Password'


Welcome t
IBM
IoT-B1-1M
SENDING D
Create You
IBM Cloud
IBM Watso
New Tab
New Tab
cloud.ibm.com/login
IBM Cloud
Catalog
Cost estimator
Docs
Log in to IBM Cloud
Don't have an account? Create an account
Sign in with
IBMid
username@example.com
Continue
Forgot ID?
Remember ID
© Copyright IBM Corp. 2014, 2022. All rights reserved.
Cookie Preferences
2:50 AM
11/14/2022




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


cloud.ibm.com/catalog
IBM Cloud
Search resources and products...
Catalog
Manage
Saranya R's Account
Sell on IBM Cloud
Catalog settings
Catalog
Search the catalog...
Category
Recommended products (6)
Compute (30)
Containers (9)
Networking (30)
Storage (20)
AI / Machine Learning (17)
Analytics (10)
Viewing 206 products
Alphabetically
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 •
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 •
API Connect
By IBM
An enterprise-grade platform for creating, securing, managing, sharing, monetizing, and analyzing custom APIs located on-premises...
Lite • Free • EU Supported • IAM-enabled •
2:49 AM
11/14/2022


cloud.ibm.com/catalog/services/internet-of-things-platform
IBM Cloud
Search resources and products...
Catalog
Manage
Saranya R's Account
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
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
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
Free
Summary
Internet of Things Platform
Free
Location: Frankfurt
Plan: Lite
Service name: Internet of Things Platform-vh
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
2:49 AM
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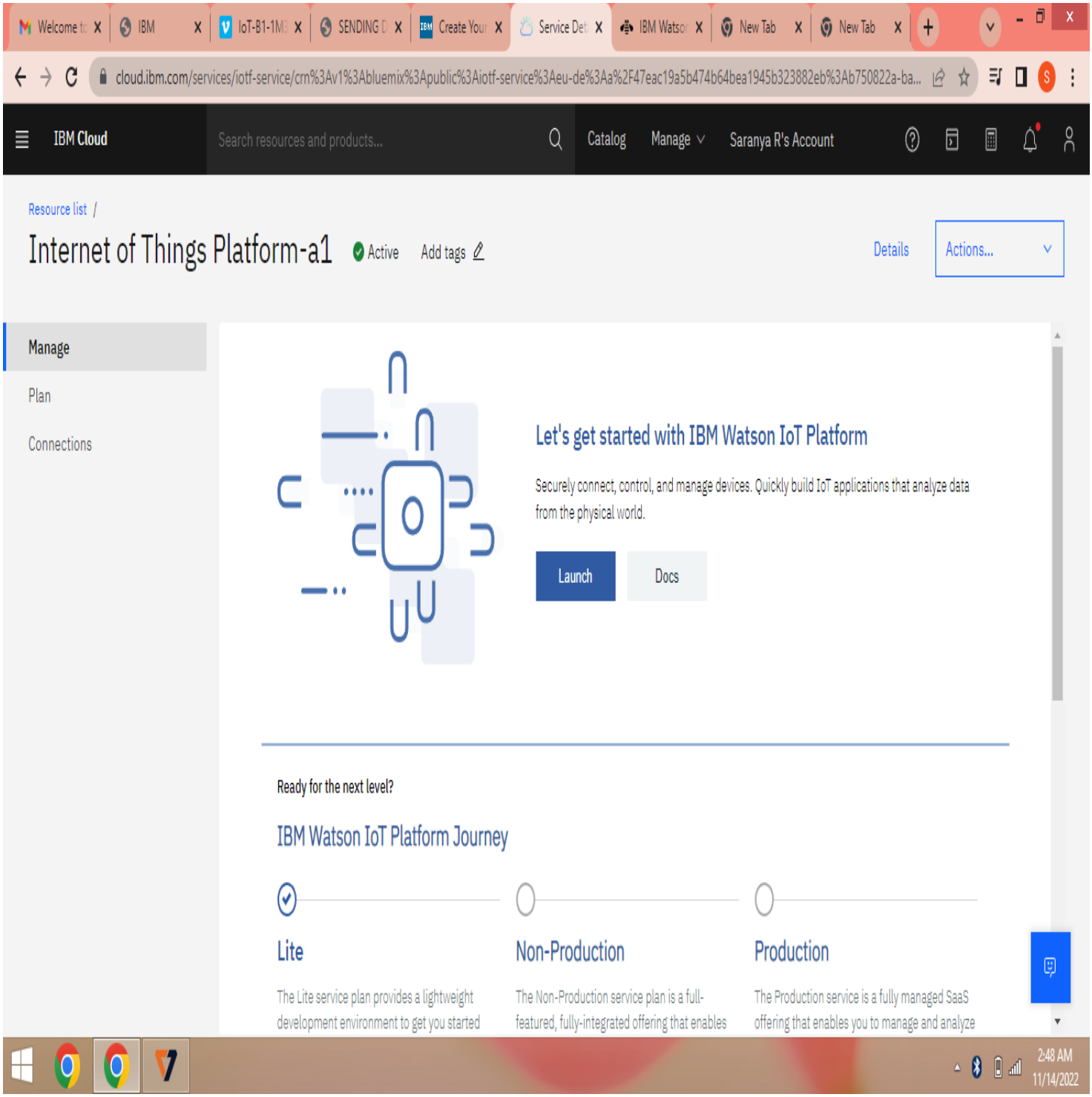
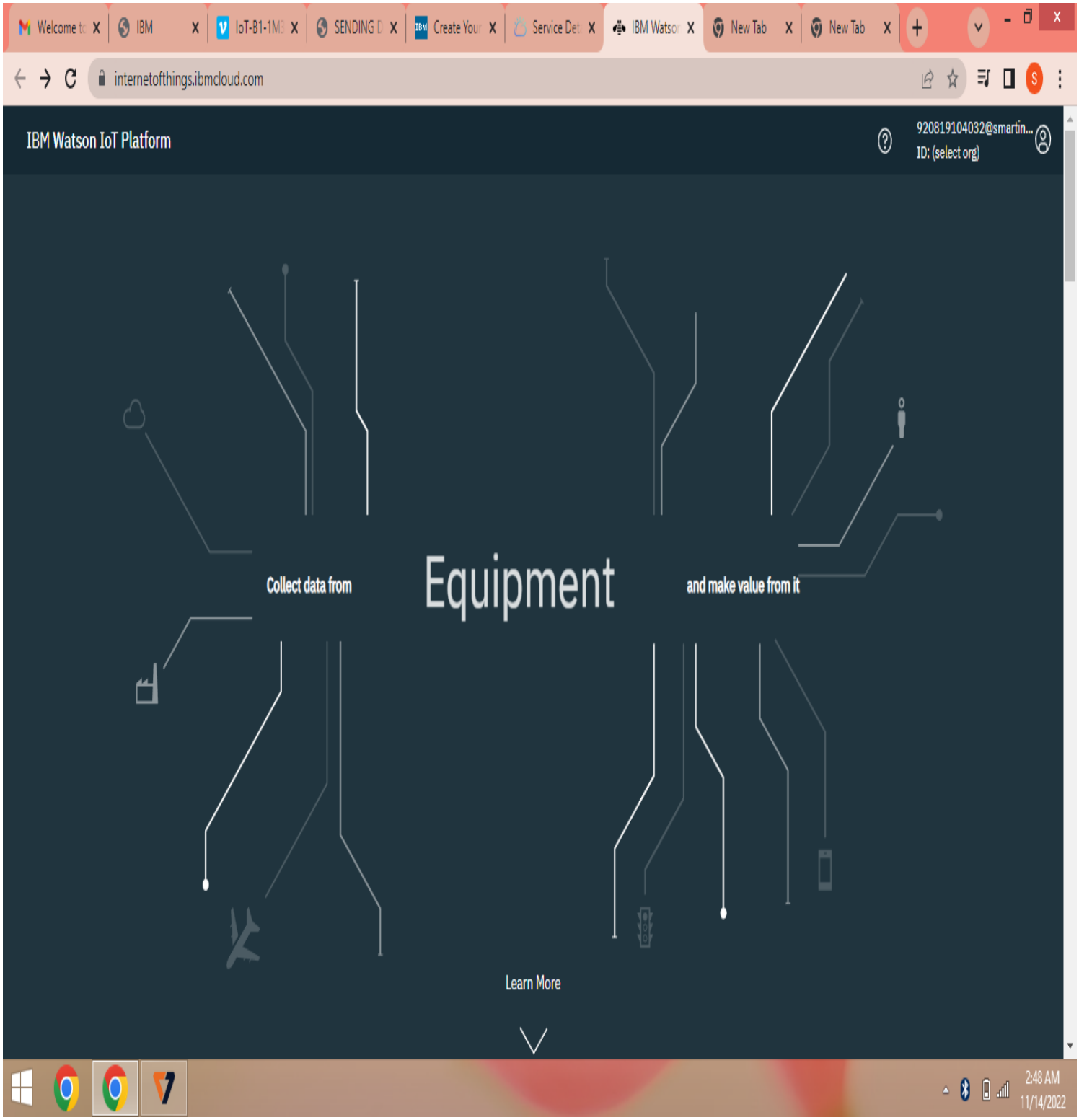



- Click on launch


Welcome to
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IBM Watson
New Tab
New Tab
internetofthings.ibmcloud.com
IBM Watson IoT Platform
920819104032@smartin...
ID: (select org)
Collect data from
Equipment
and make value from it
Learn More
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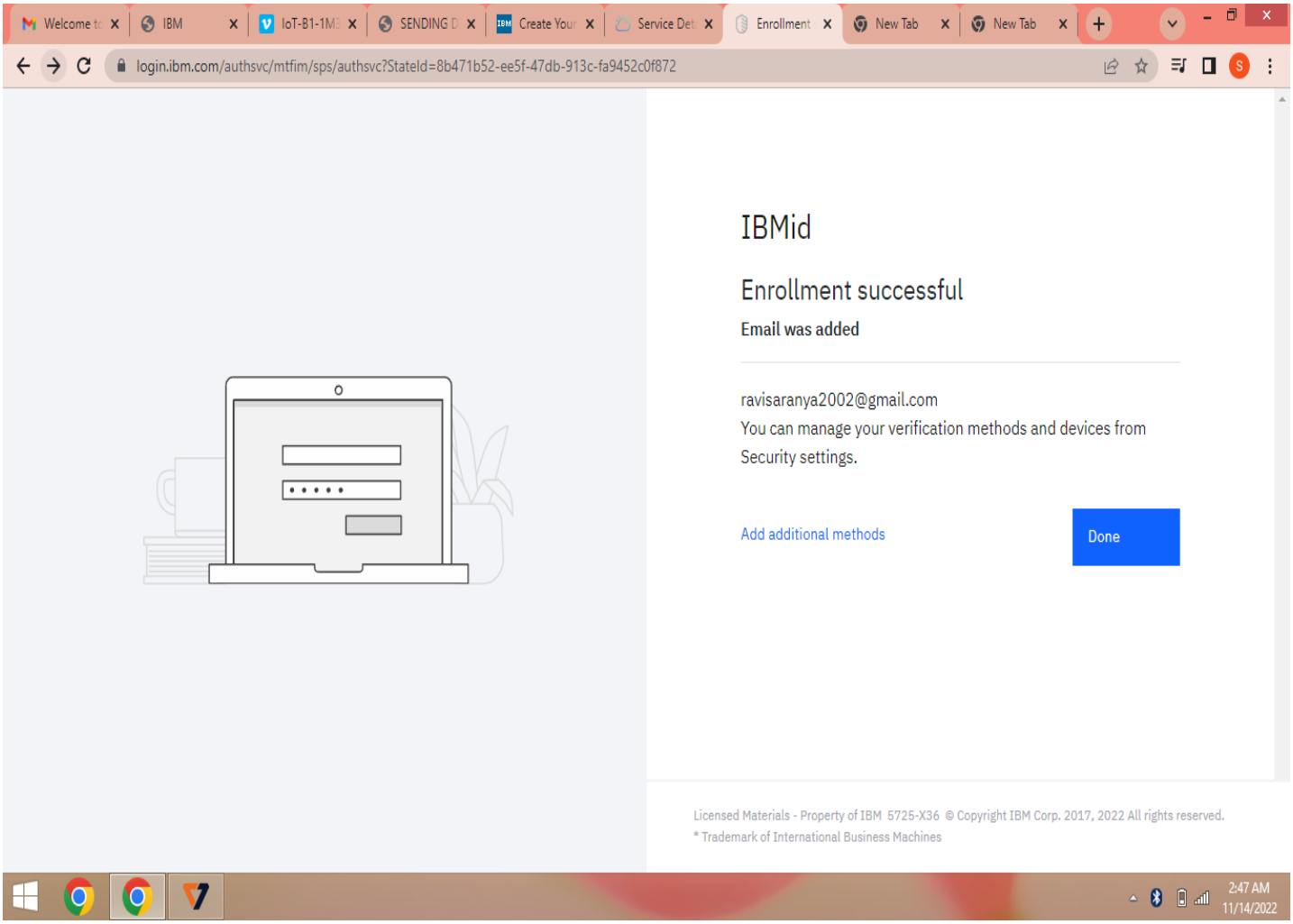
11/14/2022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Enrollment
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New Tab
login.ibm.com/authsvc/mtfim/sps/authsvc?StateId=8b471b52-ee5f-47db-913c-fa9452c0f872
IBMid
Enrollment successful
Email was added
ravisaranya2002@gmail.com
You can manage your verification methods and devices from Security settings.
Add additional methods
Done
Licensed Materials - Property of IBM 5725-X36 © Copyright IBM Corp. 2017, 2022 All rights reserved.
* Trademark of International Business Machines
2:47 AM
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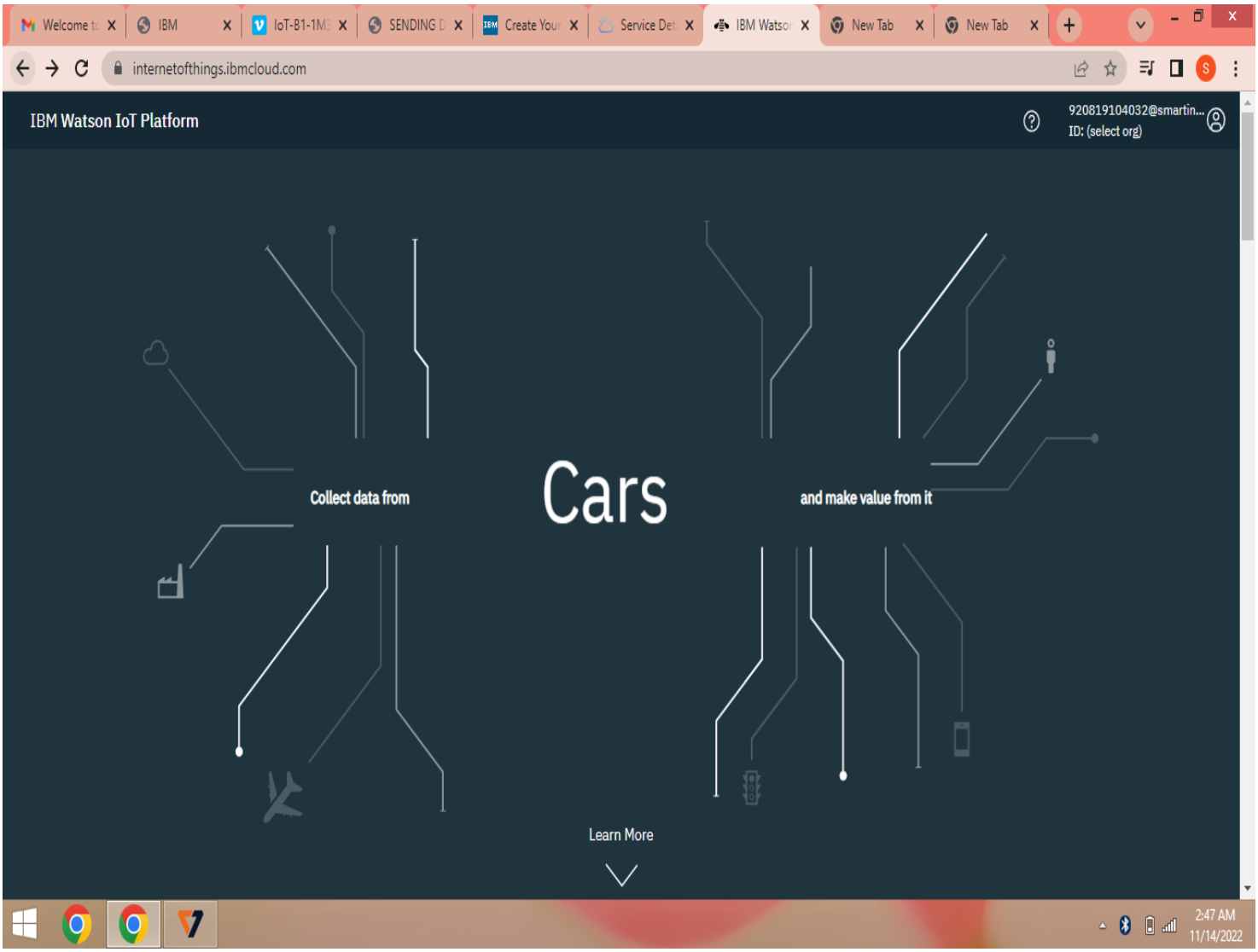
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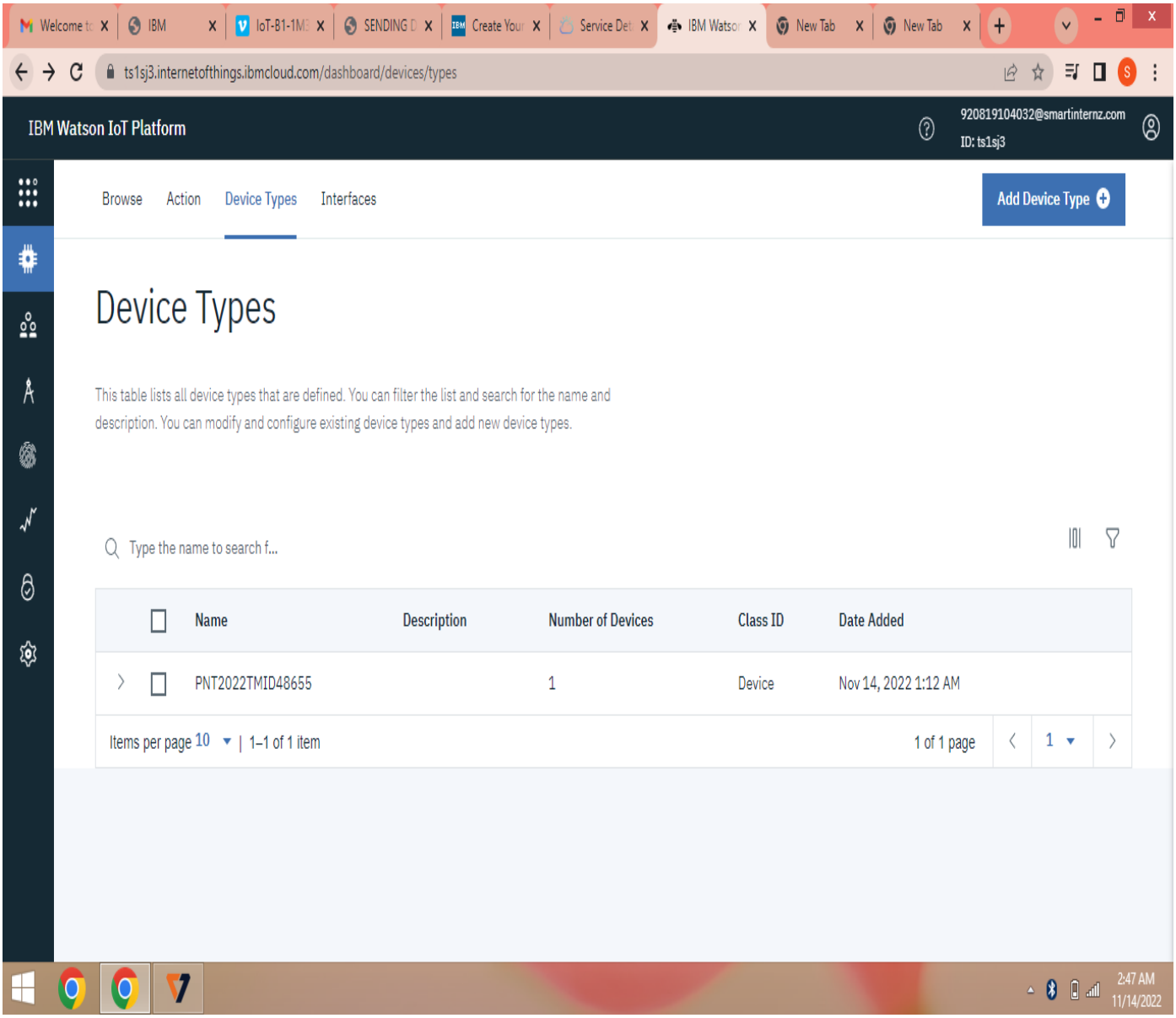
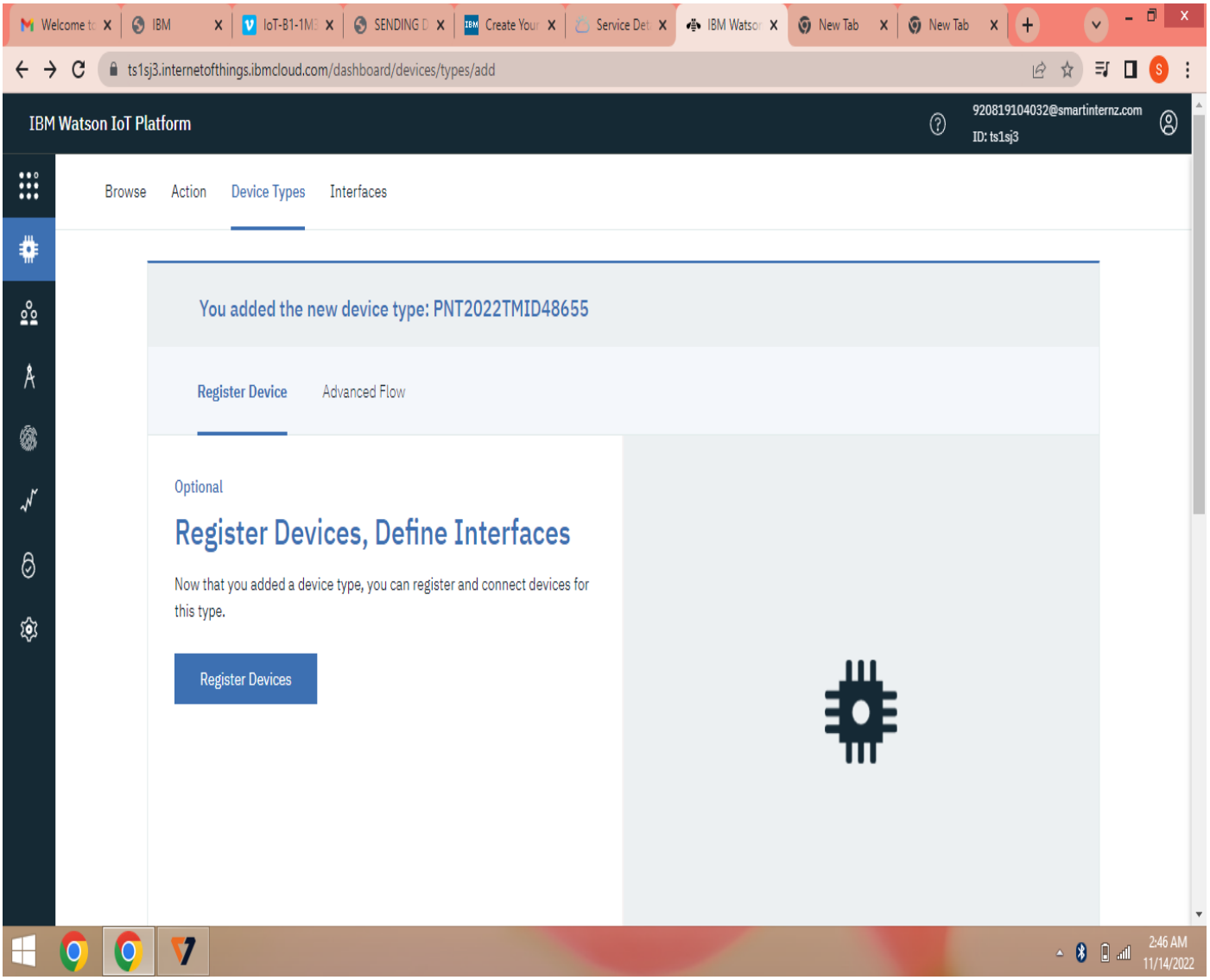
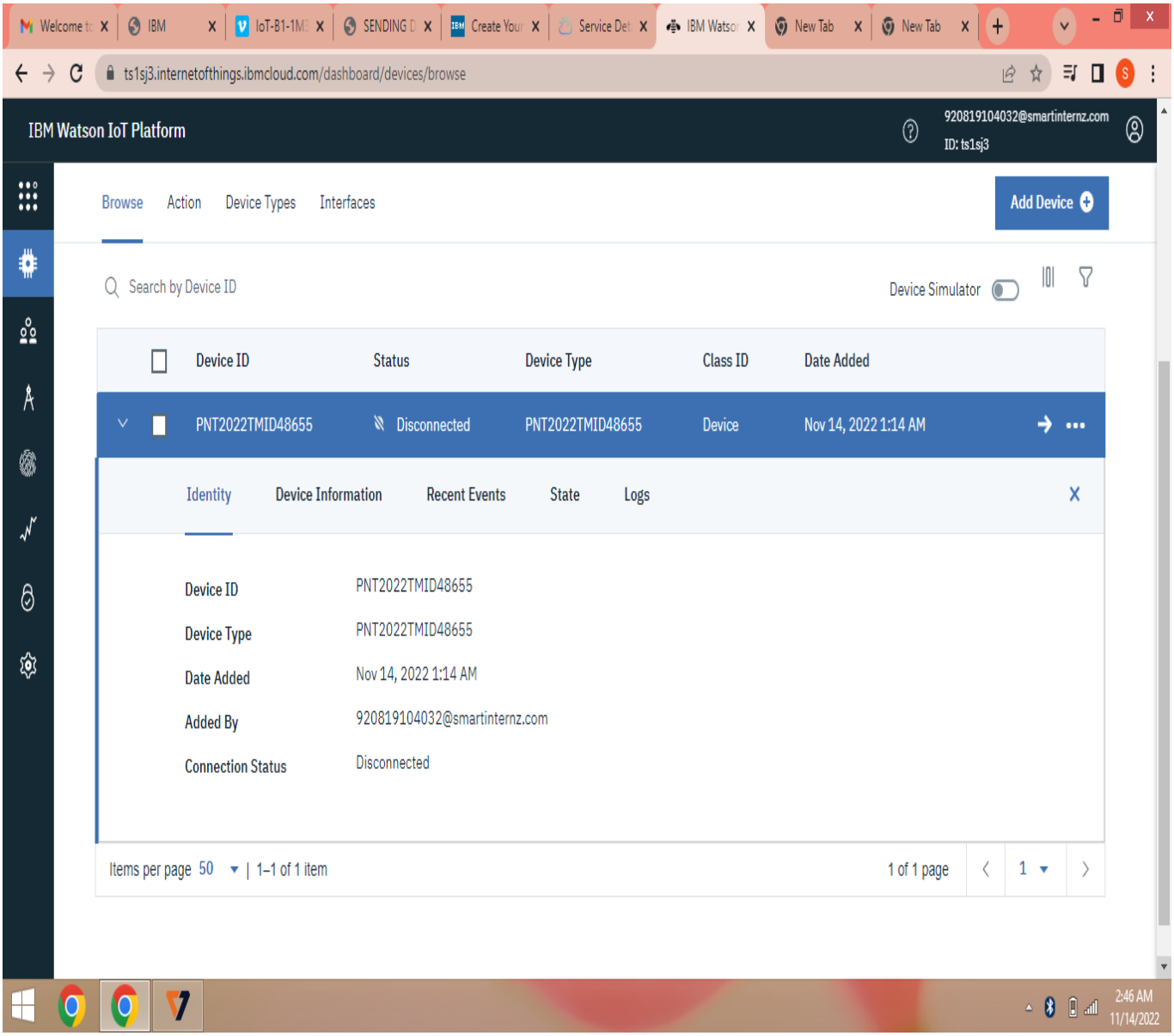
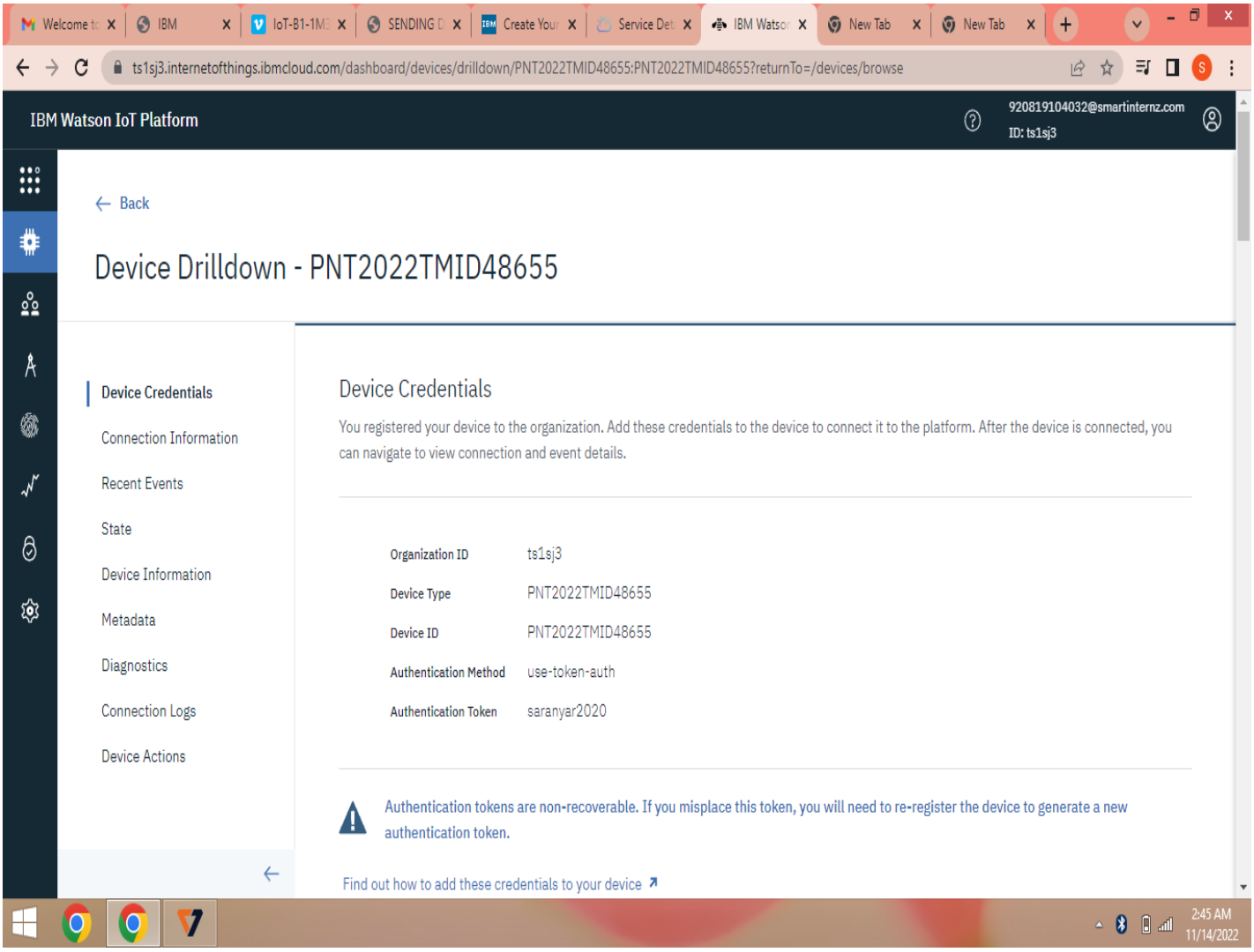
internetofthings.ibmcloud.com
IBM Watson IoT Platform
920819104032@smartin...
ID: (select org)
Collect data from
Cars
and make value from it
Learn More
2:47 AM
11/14/2022




- Create Device Type as what you like

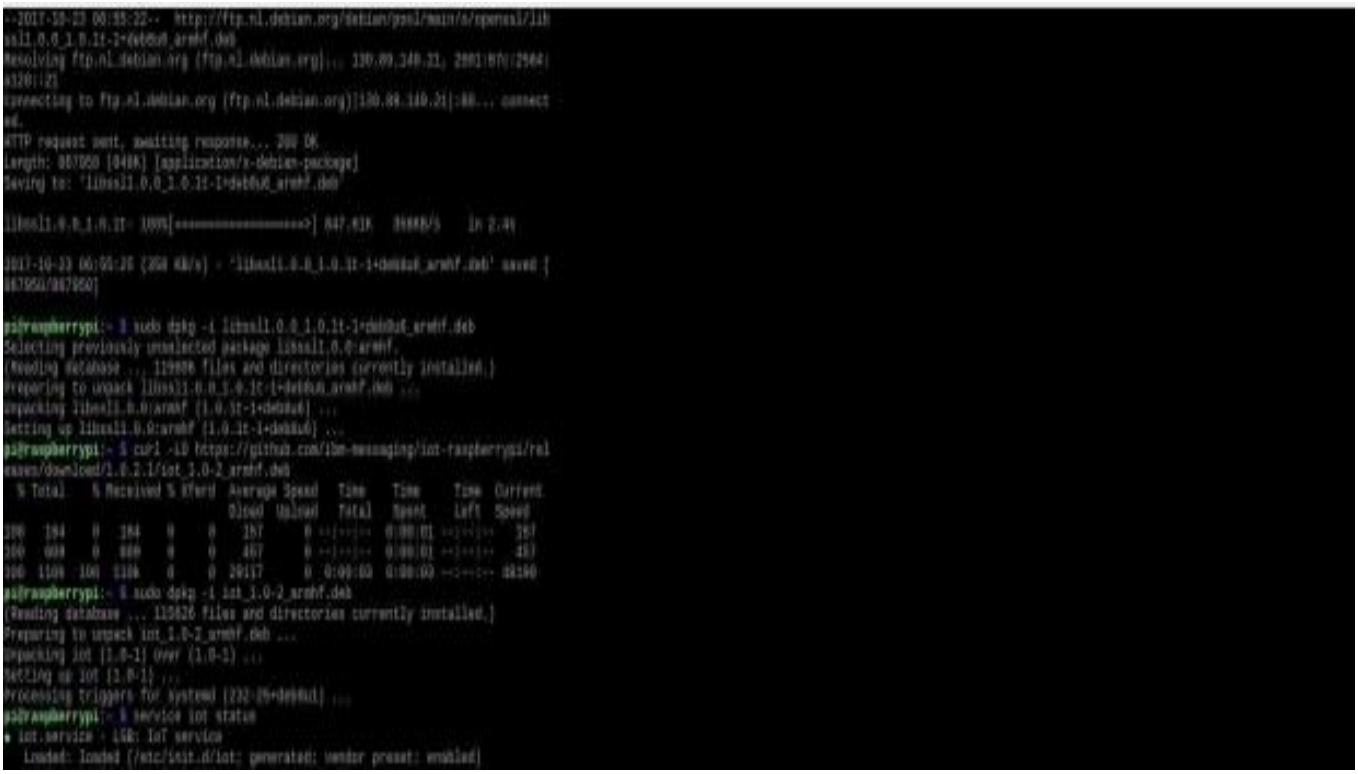

ts1sj3.internetofthings.ibmcloud.com/dashboard/devices/types/add
IBM Watson IoT Platform
920819104032@smartinternz.com
ID: ts1sj3
Browse
Action
Device Types
Interfaces
You added the new device type: PNT2022TMID48655
Register Device
Advanced Flow
Optional
Register Devices, Define Interfaces
Now that you added a device type, you can register and connect devices for this type.
Register Devices
2:46 AM
11/14/2022


ts1sj3.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
920819104032@smartinternz.com
ID: ts1sj3
Browse
Action
Device Types
Interfaces
Add Device
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
PNT2022TMID48655
Disconnected
PNT2022TMID48655
Device
Nov 14, 2022 1:14 AM
Identity
Device Information
Recent Events
State
Logs
Device ID
PNT2022TMID48655
Device Type
PNT2022TMID48655
Date Added
Nov 14, 2022 1:14 AM
Added By
920819104032@smartinternz.com
Connection Status
Disconnected
Items per page 50
1–1 of 1 item
1 of 1 page
1
2:46 AM
11/14/2022

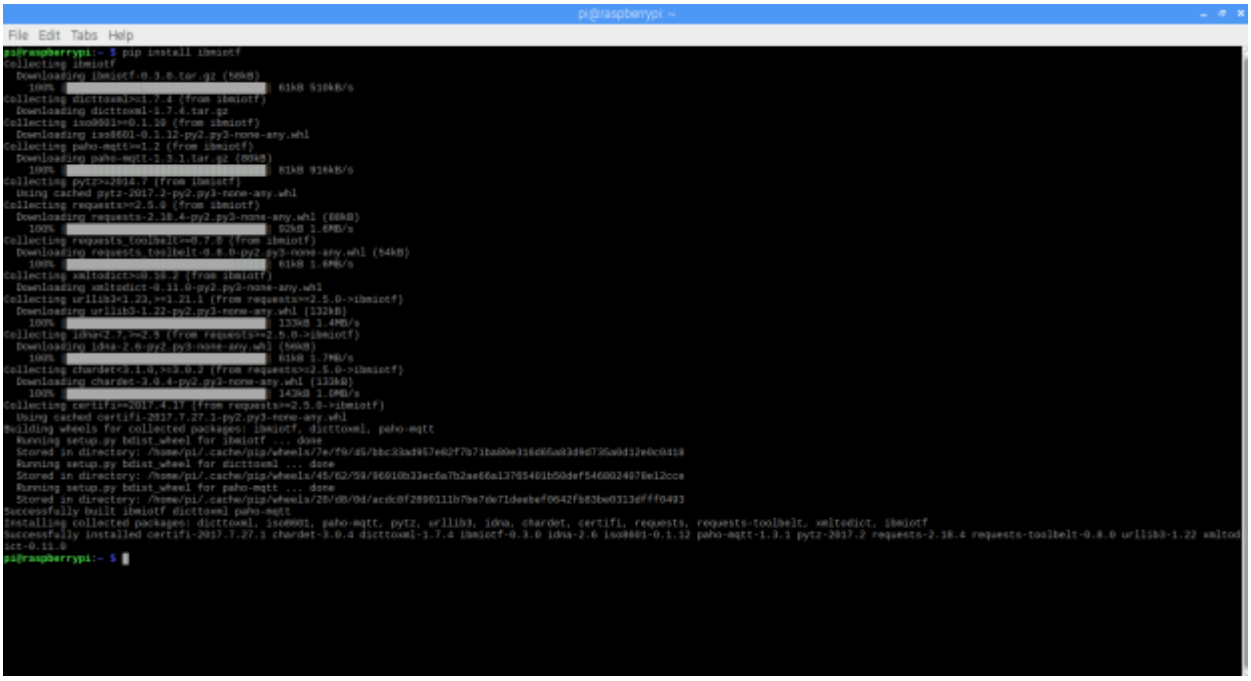

Welcome to
IBM
IoT-B1-1M3
SENDING D
Create Your
Service Det
IBM Watson
New Tab
New Tab
ts1sj3.internetofthings.ibmcloud.com/dashboard/devices/drilldown/PNT2022TMID48655:PNT2022TMID48655?returnTo=/devices/browse
IBM Watson IoT Platform
920819104032@smartinternz.com
ID: ts1sj3
Back
Device Drilldown - PNT2022TMID48655
Device Credentials
Connection Information
Recent Events
State
Device Information
Metadata
Diagnostics
Connection Logs
Device Actions
Device Credentials
You registered your device to the organization. Add these credentials to the device to connect it to the platform. After the device is connected, you can navigate to view connection and event details.
Organization ID ts1sj3
Device Type PNT2022TMID48655
Device ID PNT2022TMID48655
Authentication Method use-token-auth
Authentication Token saranyar2020
Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.
Find out how to add these credentials to your device
2:45 AM
11/14/2022

**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/io t_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:



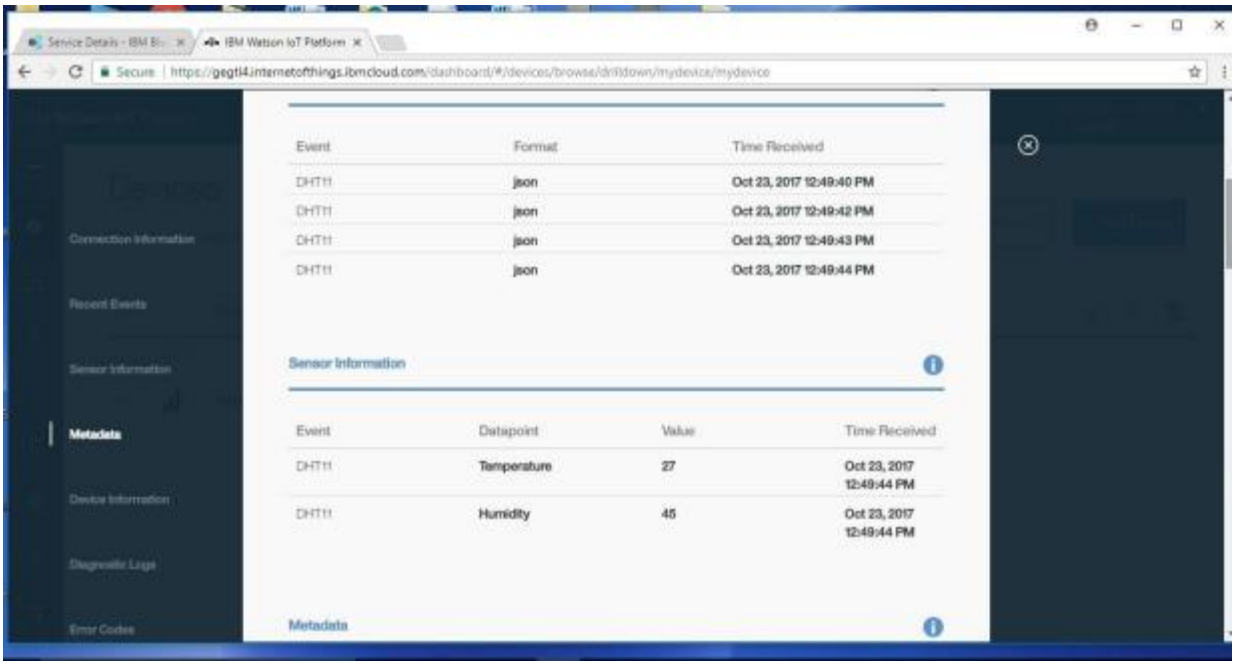
- Then open your terminal and type pip install ibmiotf




- I have sent DHT-11 Sensors data to ibm bluemix .To get the code u need to login into IOT GYAN. Then I get the image as follows in my pi's shell:

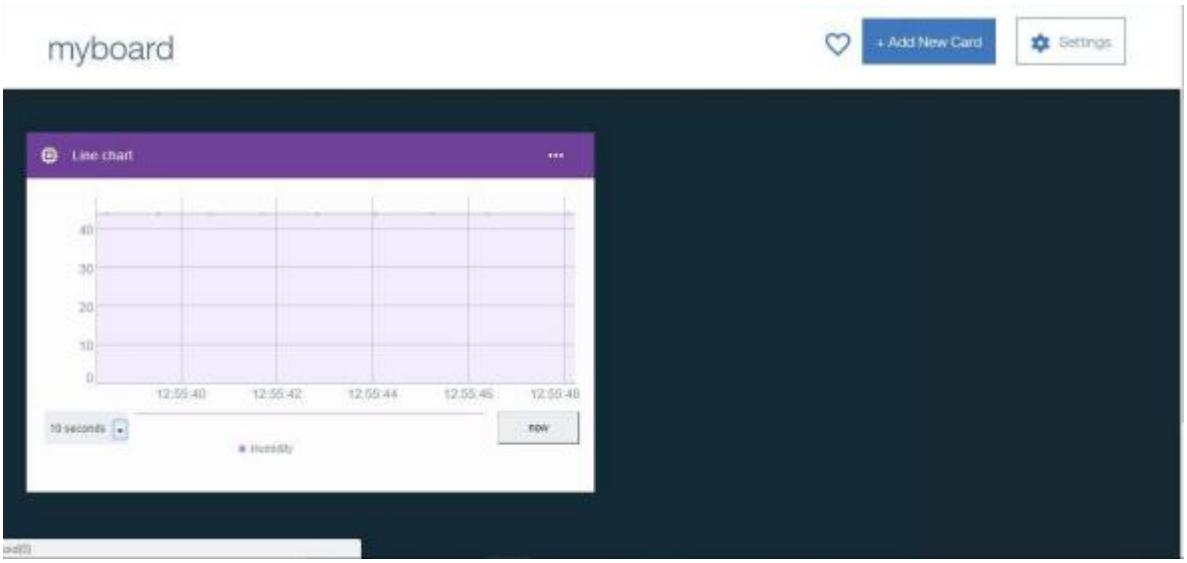

**Step-3: checking your data sent on IBM Bluemix:**

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 dta is being received.




**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




**Conclusion :**

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