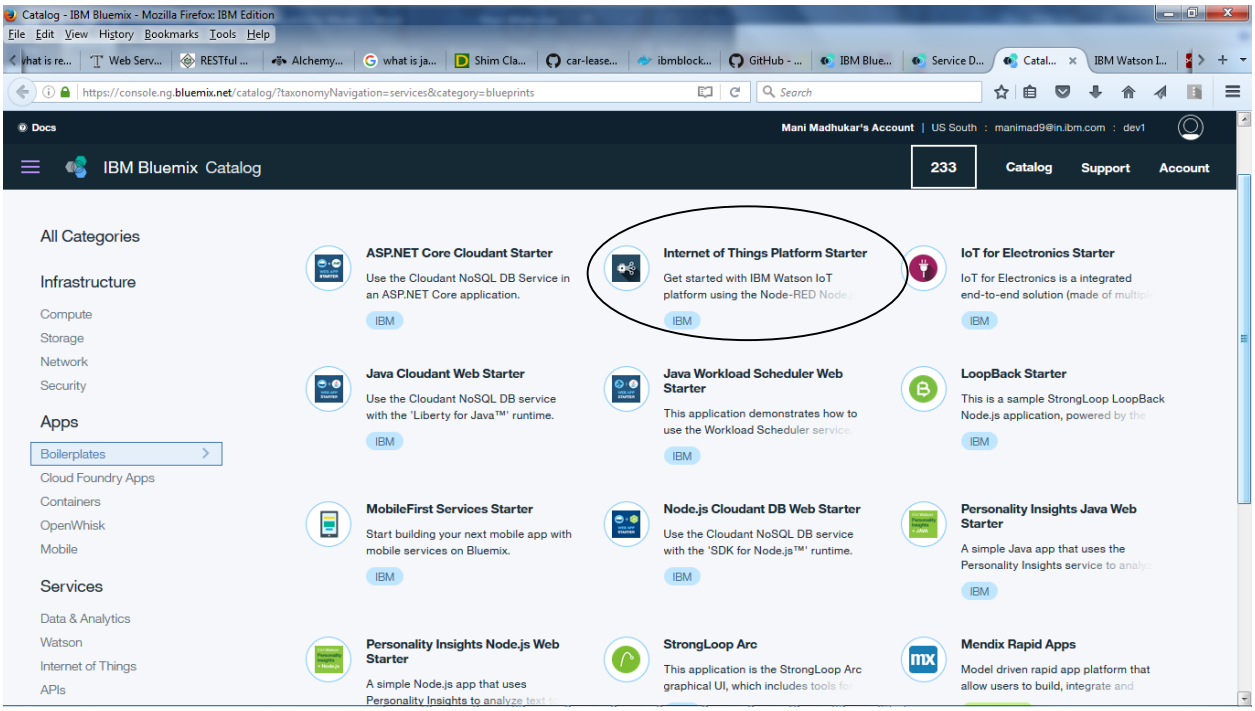
Step-1- Sign in to Bluemix www.bluemix.net with your registered email id and password.

Step-2 - Let's begin with creating an IOT application using IOT Boiler plate provided by IBM Bluemix platform.

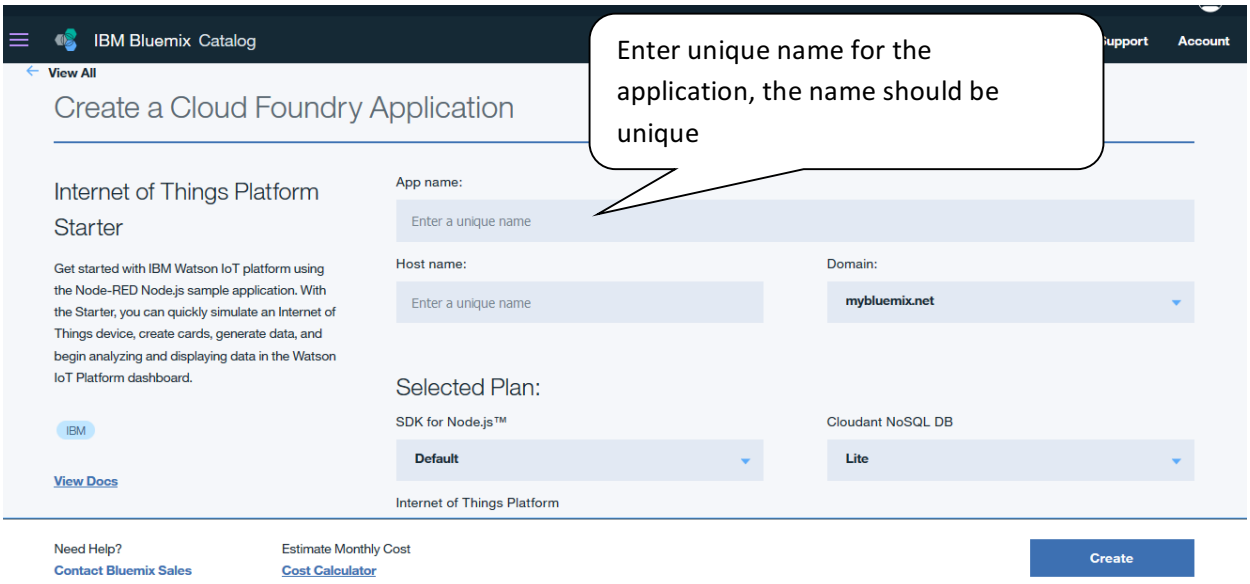
Navigate to **CATALOG** page, On the **CATALOG** page, in the **BOILERPLATE** section, locate the **INTERNET OF THINGS PLATFORM STARTER** and click on this.



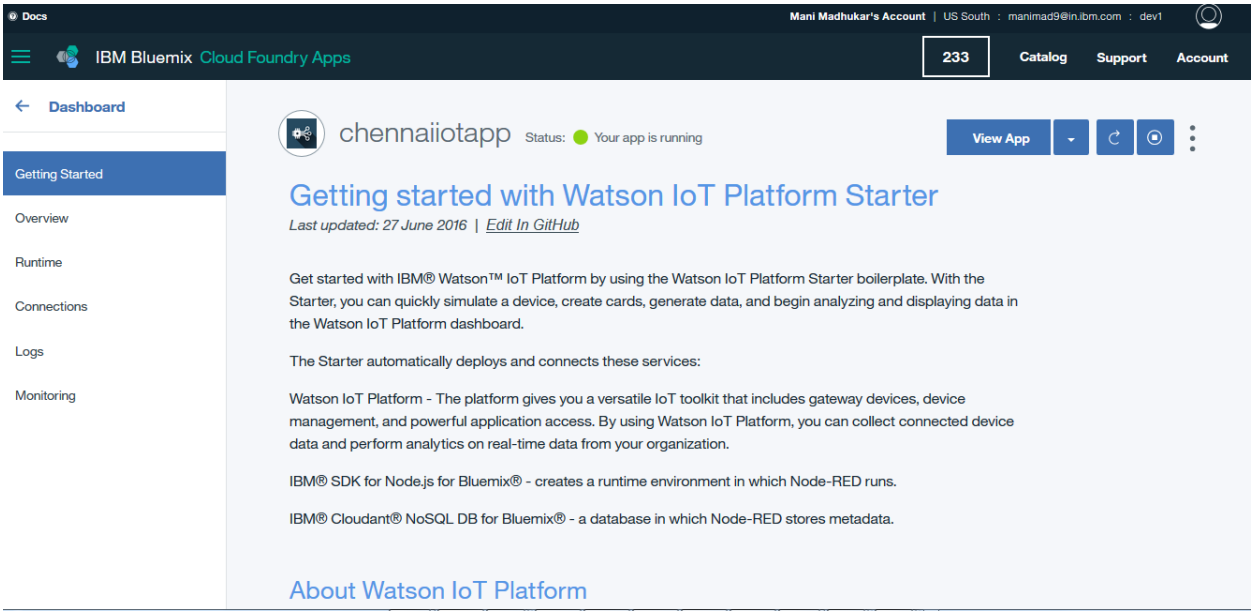
Step-3 Provide a ***unique name*** in the **APP NAME** field, which will get populated in the host name on its own. Click on **CREATE** button on the bottom of the page.

Remember the Application name needs to be unique for app instance to spin up, else it will throw an error, "host already taken". You can append the APP NAME with numerals in the end.

The **APP NAME** will be **suffixed to the Bluemix end point** to provide you with the ROUTE to access the application over Internet. The route will be something like- www.XXYYZZ.mybluemix.net or www.XXYYZZ.eu-gb.mybluemix.net or www.XXYYZZ.au-syd.mybluemix.net, depending upon the endpoint of Bluemix hosted



Step- 4 - Once the application is successfully instantiated (Running), it will lead to the view as below.



Step – 5- Click on the **OVERVIEW** on the left panel.

You can also access your application from the Dashboard, access the application by clicking on it.

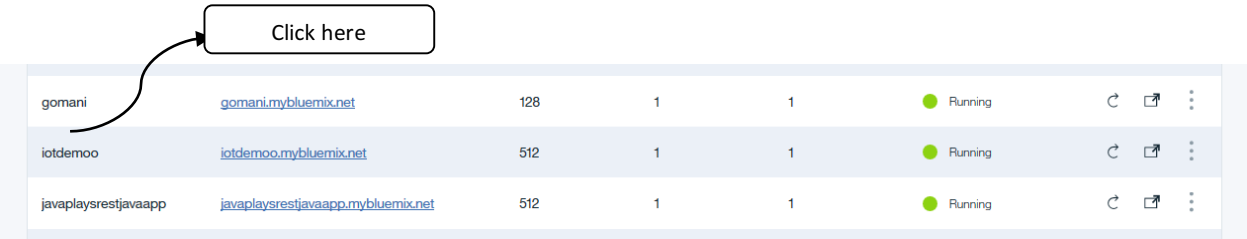


Figure 1. Dashboard view of all running applications

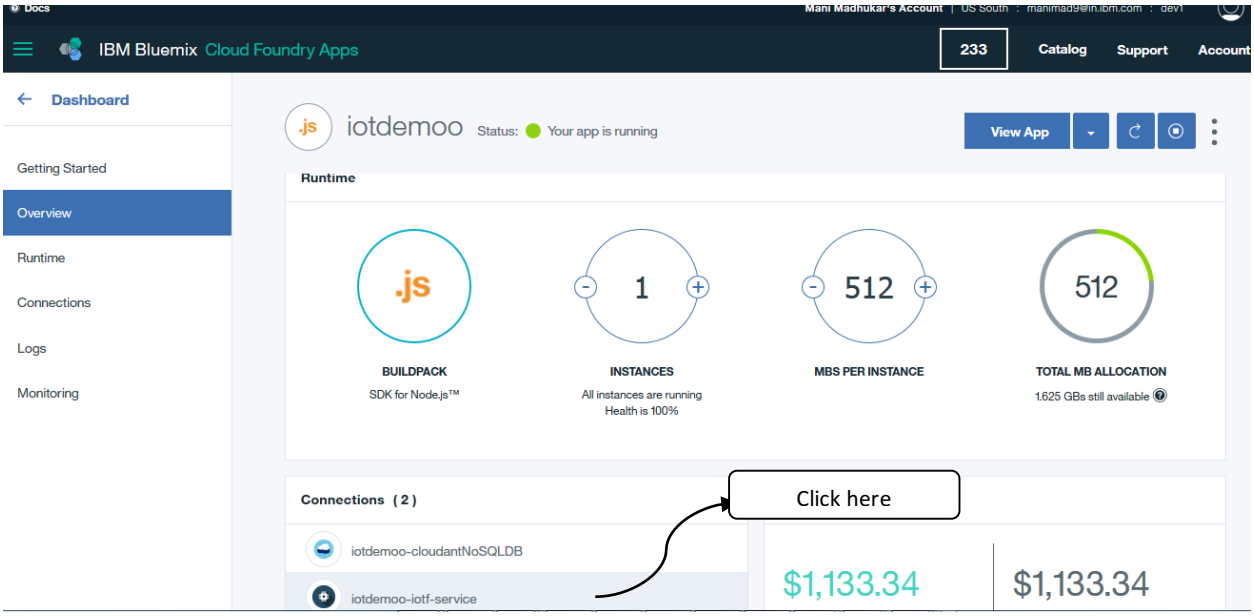
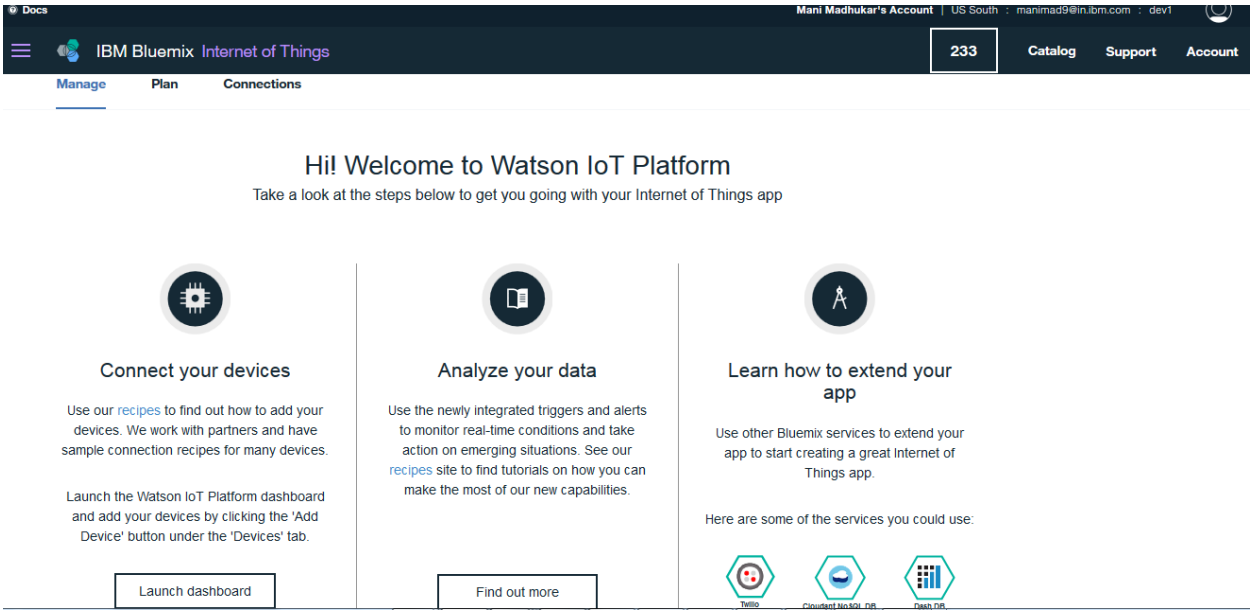
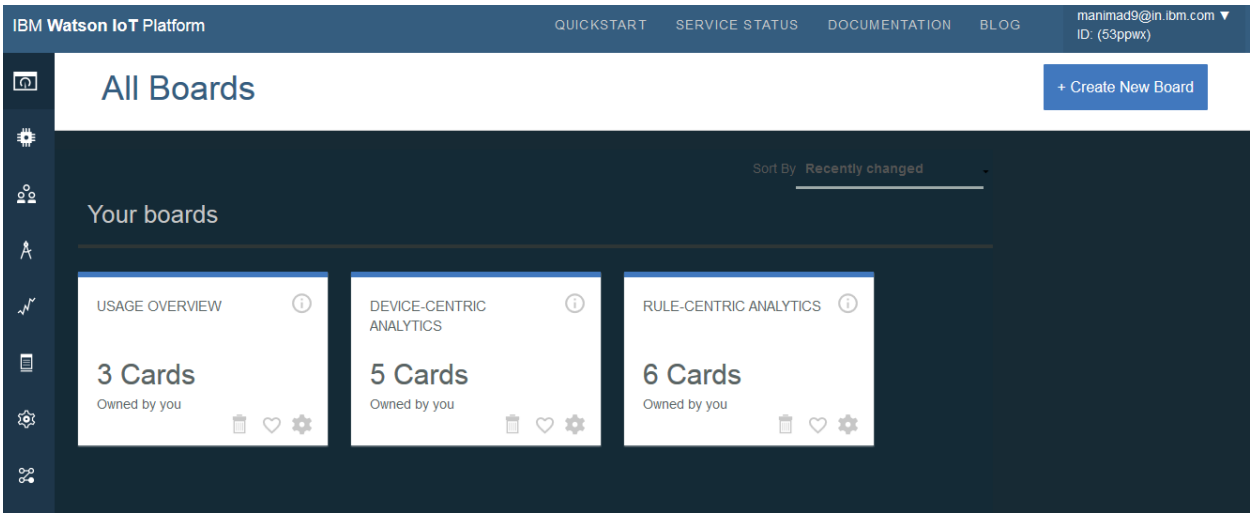


Figure 2 View of Application console from OVERVIEW tab

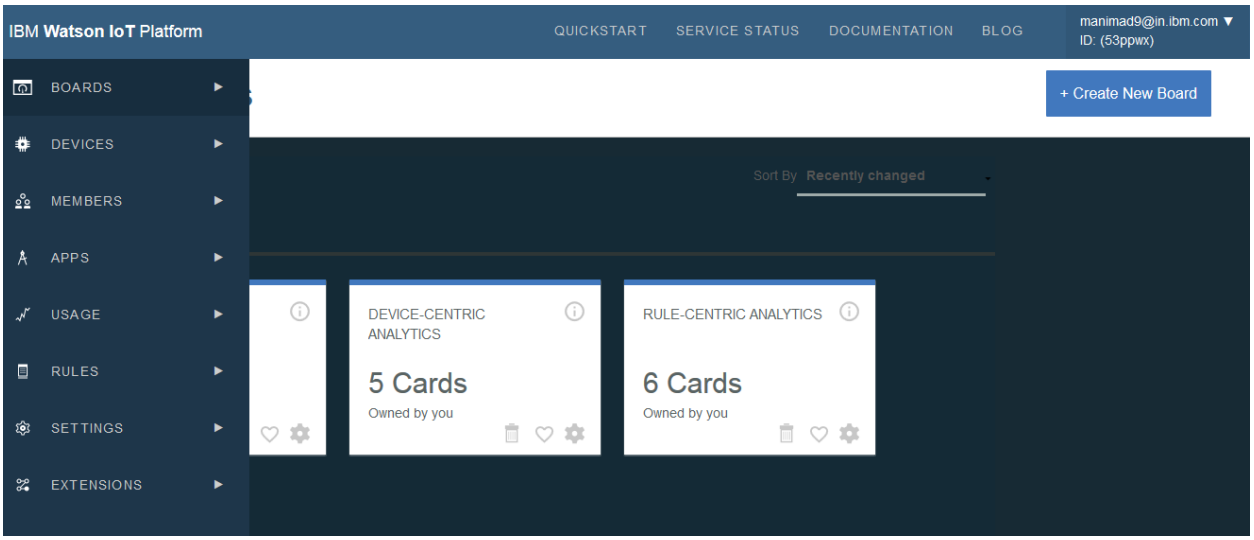
Step- 6- Click on **IOT foundation service**, you should get the view of the available components in the IOTF service as below –



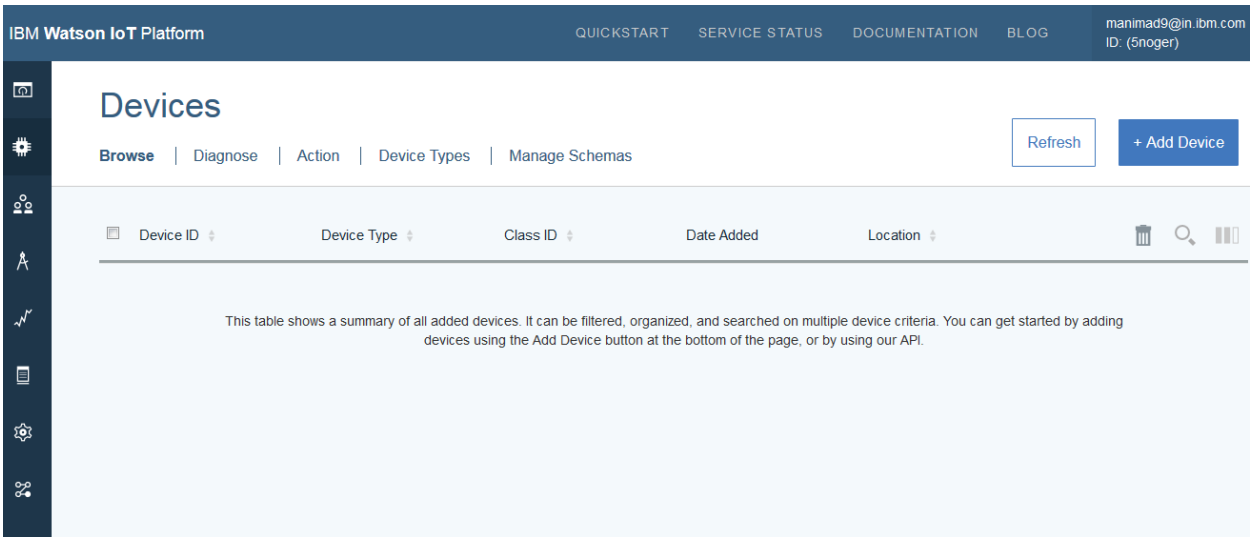
Step – 7 - We need to register the gateway sensor/devices with the IOT Foundation service to retrieve the data from the sensors. Click on **LAUNCH DASHBOARD**.



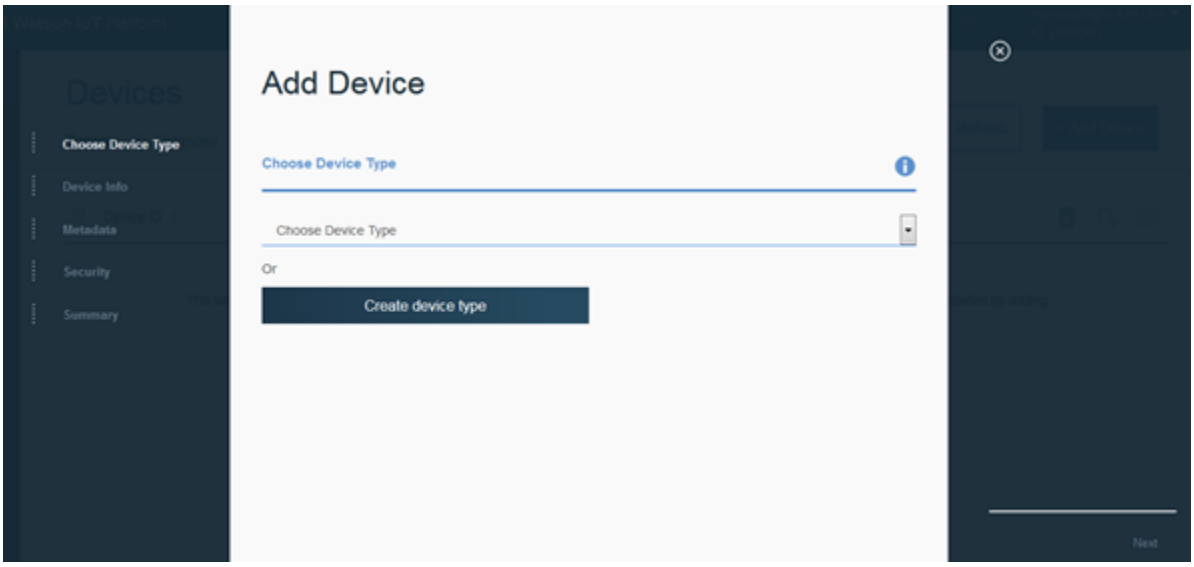
Step – 8 - The Dashboard will open the IBM Watson IOT Platform with multiple options on the **left panel**, **roll the mouse on the left panel to get the view below** –



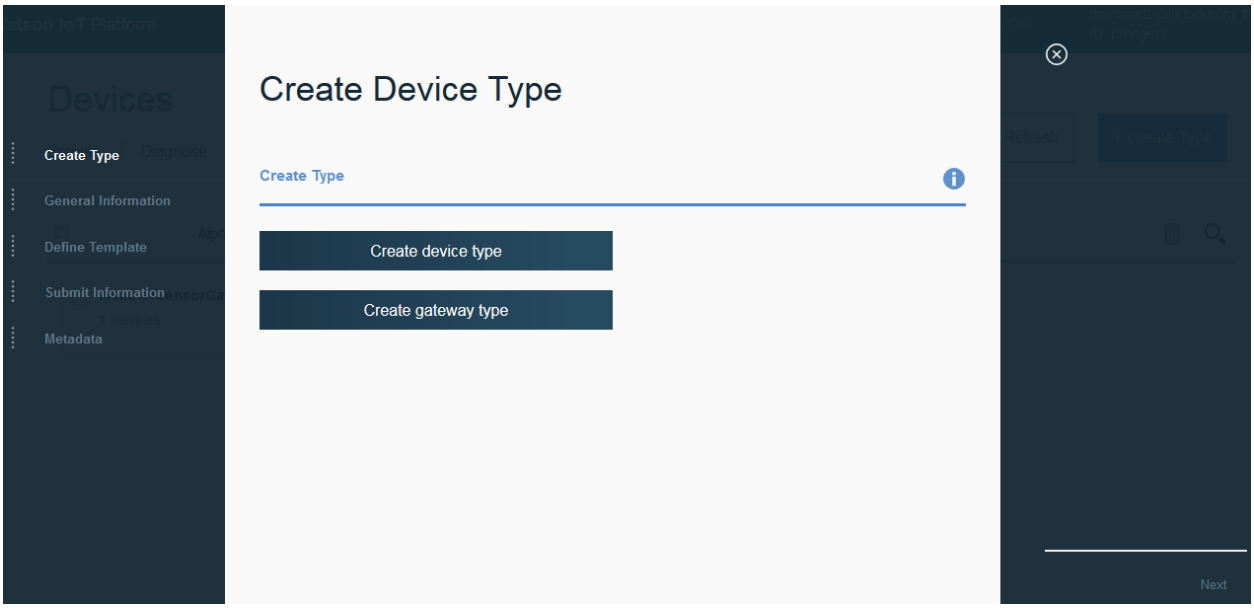
Step -9 – We need to register the GATEWAY with IOT Foundation to get the data from the sensors. Click on the **DEVICE** tab to proceed to the device registration page, as shown below-

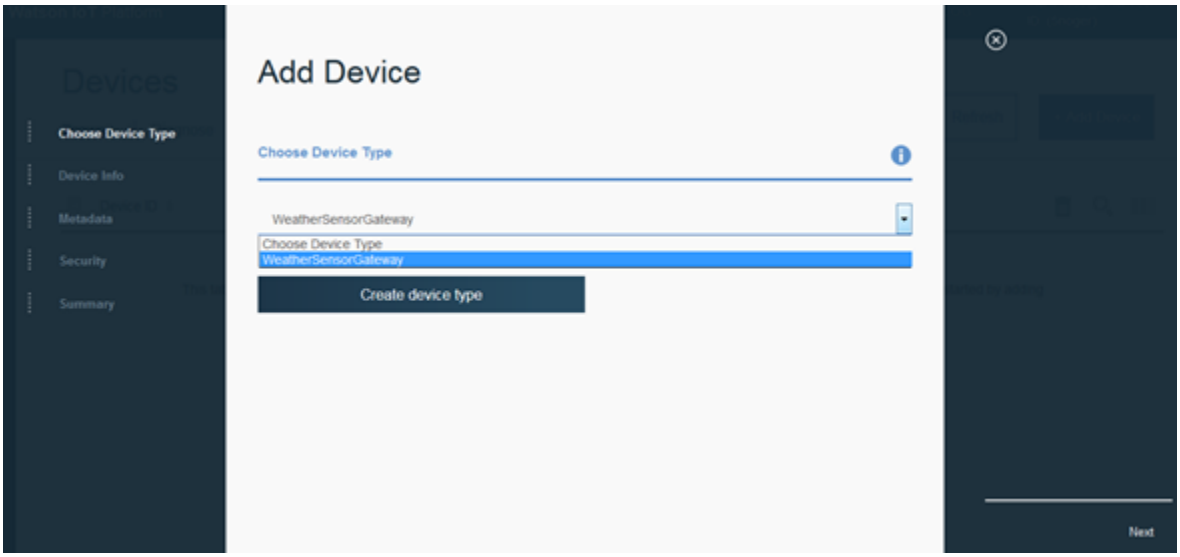


Step – 10 – Click on **CREATE DEVICE TYPE** as Gateway to proceed further for getting the sensor connected.

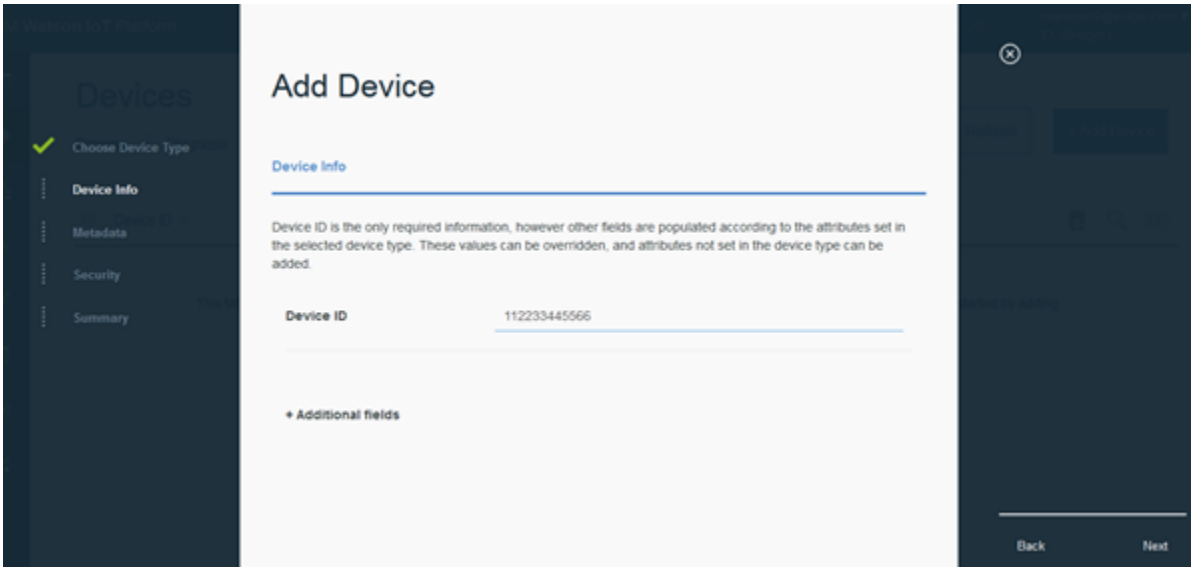


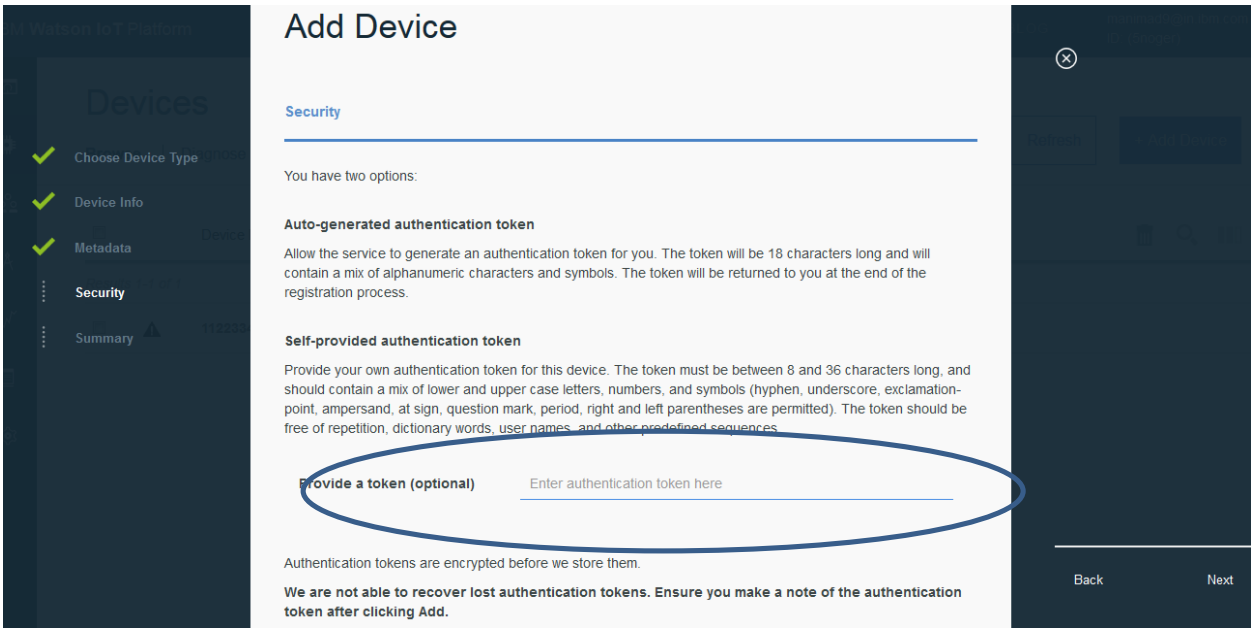
Step - 11 – Click on **CREATE GATEWAY TYPE**, provide a unique name, I provided WeatherSensorGateway , click on **NEXT**. Once you complete adding the Gateway type in the Device type window, the same will be available to connect devices to that gateway.



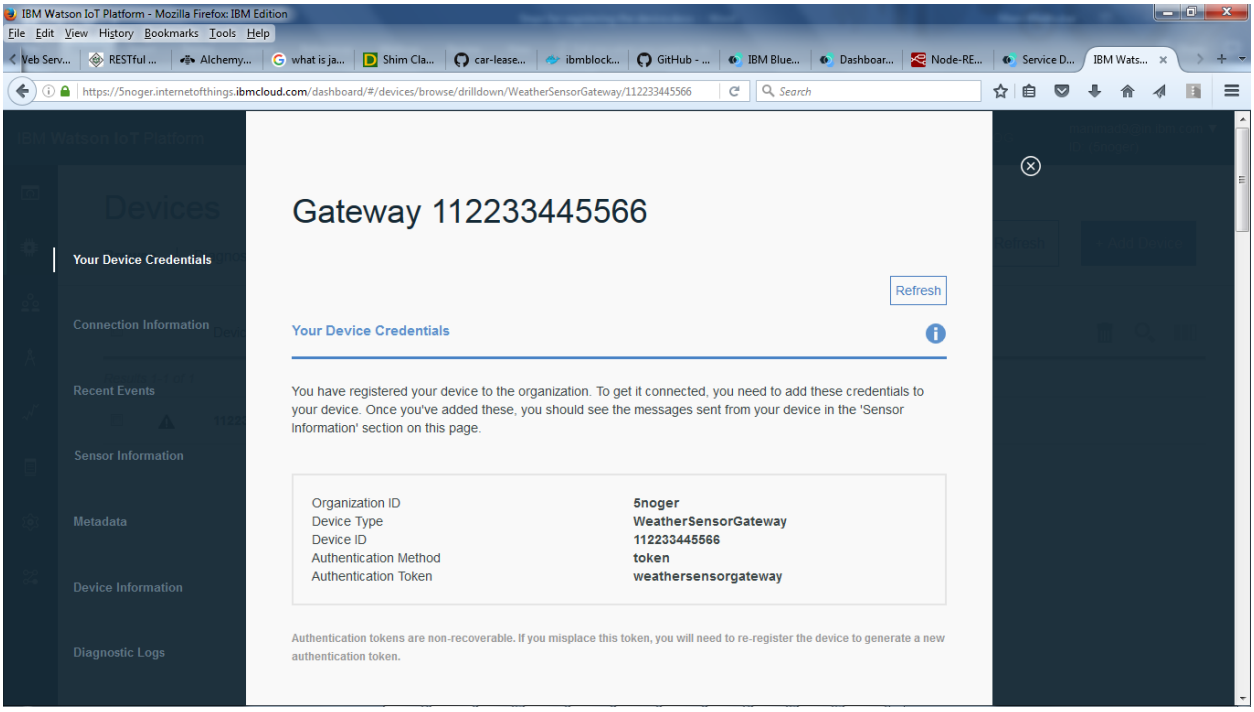


Step – 12 – After creating the Gateway device type, **ADD DEVICE** to the type of Gateway just created. You need to provide the **DEVICE ID**, click **NEXT**, OPT for self authentication and create an AUTH TOKEN for the same.

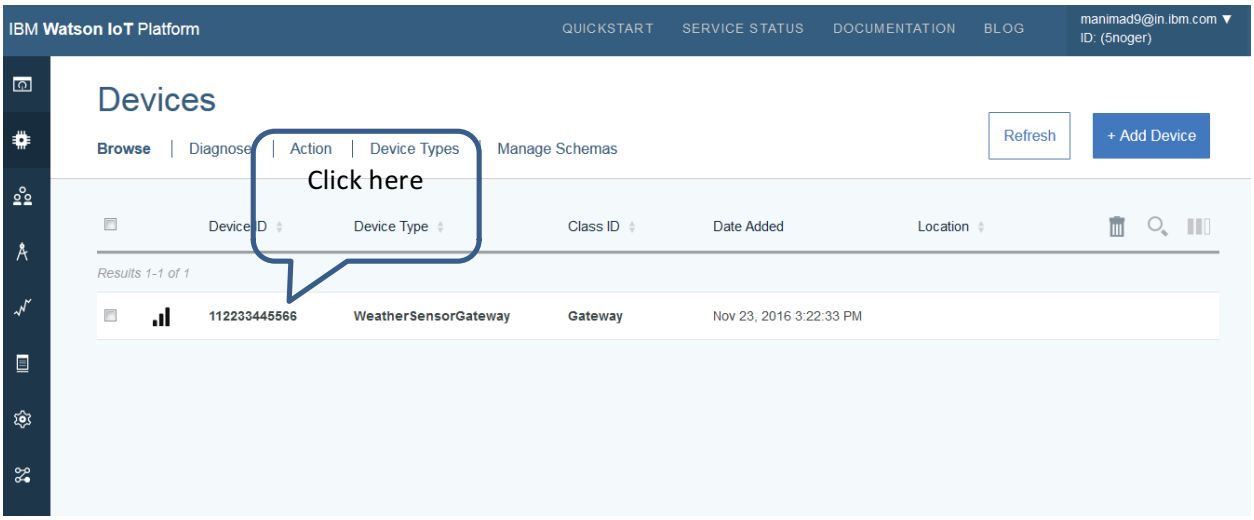


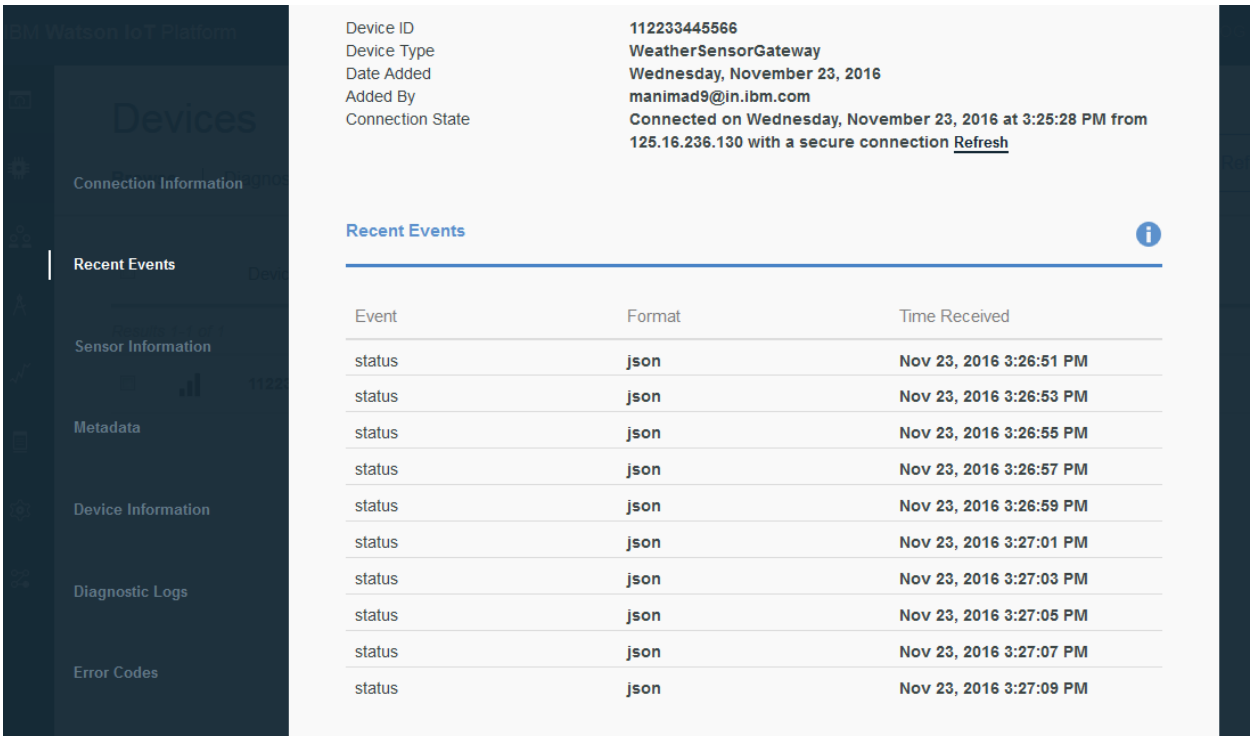


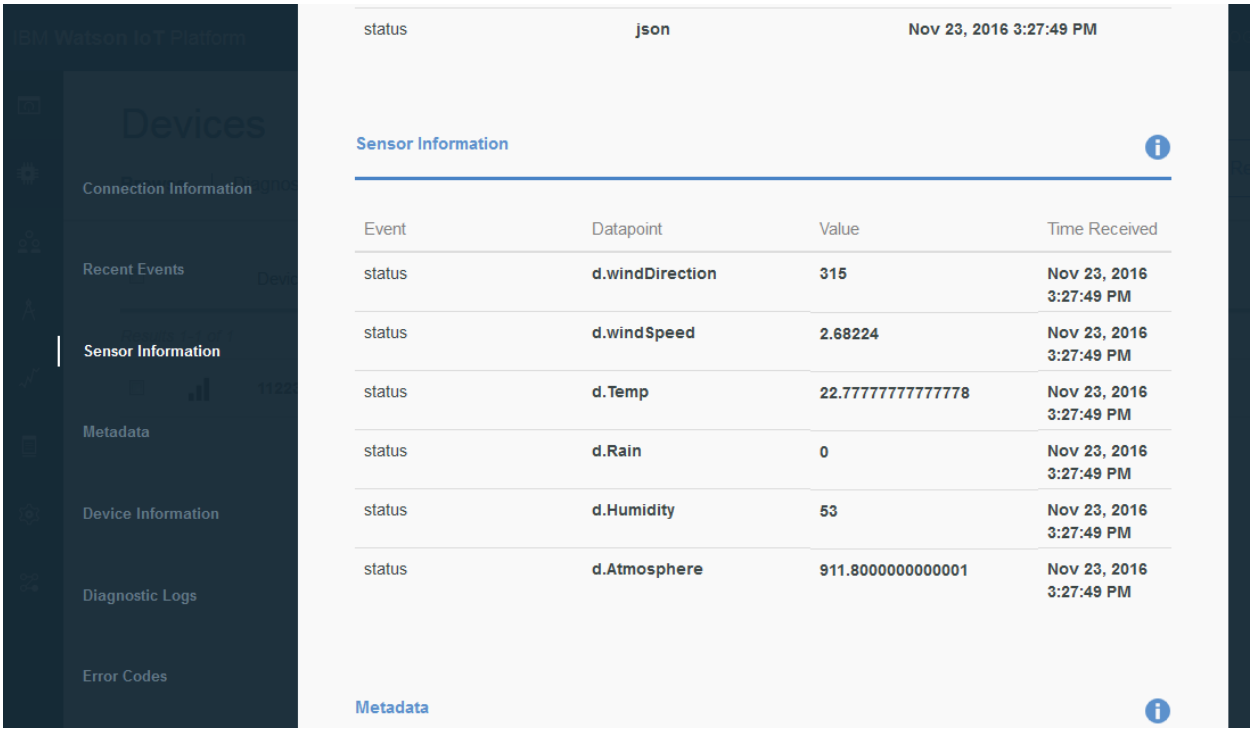
STEP- 13- Once complete, the process should return the entire connection details as depicted below.
Please capture the details with a snapshot or write down the details to be used in next steps.



Step- 14 – Please ensure that the data is being captured by clicking on the device as shown below, once done, we can see the data flowing




IBM Watson IoT Platform
Devices
Connection Information
Recent Events
Sensor Information
Metadata
Device Information
Diagnostic Logs
Error Codes
Device ID 112233445566
Device Type WeatherSensorGateway
Date Added Wednesday, November 23, 2016
Added By manimad9@in.ibm.com
Connection State Connected on Wednesday, November 23, 2016 at 3:25:28 PM from 125.16.236.130 with a secure connection Refresh
Recent Events
Event Format Time Received
status json Nov 23, 2016 3:26:51 PM
status json Nov 23, 2016 3:26:53 PM
status json Nov 23, 2016 3:26:55 PM
status json Nov 23, 2016 3:26:57 PM
status json Nov 23, 2016 3:26:59 PM
status json Nov 23, 2016 3:27:01 PM
status json Nov 23, 2016 3:27:03 PM
status json Nov 23, 2016 3:27:05 PM
status json Nov 23, 2016 3:27:07 PM
status json Nov 23, 2016 3:27:09 PM

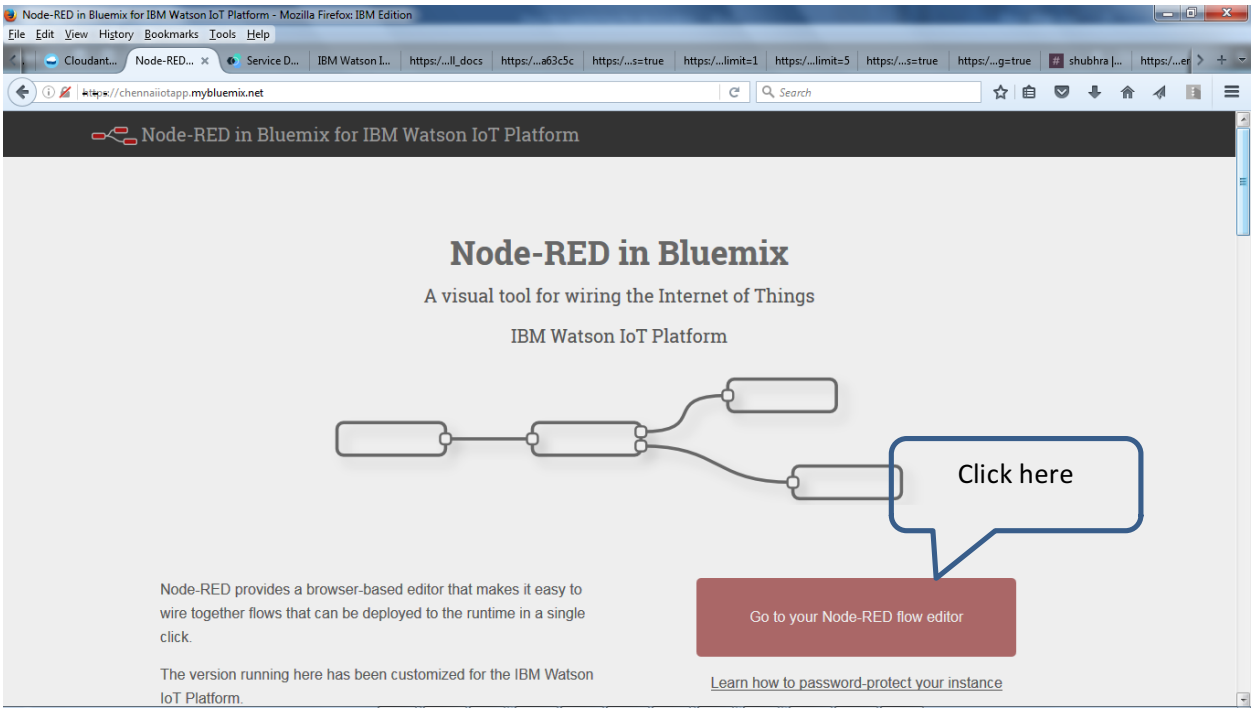

IBM Watson IoT Platform
Devices
Connection Information
Recent Events
Sensor Information
Metadata
Device Information
Diagnostic Logs
Error Codes
status json Nov 23, 2016 3:27:49 PM
Sensor Information
Event Datapoint Value Time Received
status d.windDirection 315 Nov 23, 2016 3:27:49 PM
status d.windSpeed 2.68224 Nov 23, 2016 3:27:49 PM
status d.Temp 22.77777777777778 Nov 23, 2016 3:27:49 PM
status d.Rain 0 Nov 23, 2016 3:27:49 PM
status d.Humidity 53 Nov 23, 2016 3:27:49 PM
status d.Atmosphere 911.8000000000001 Nov 23, 2016 3:27:49 PM
Metadata

Step – 15- The data is at the broker, the next part is consumption of the data.

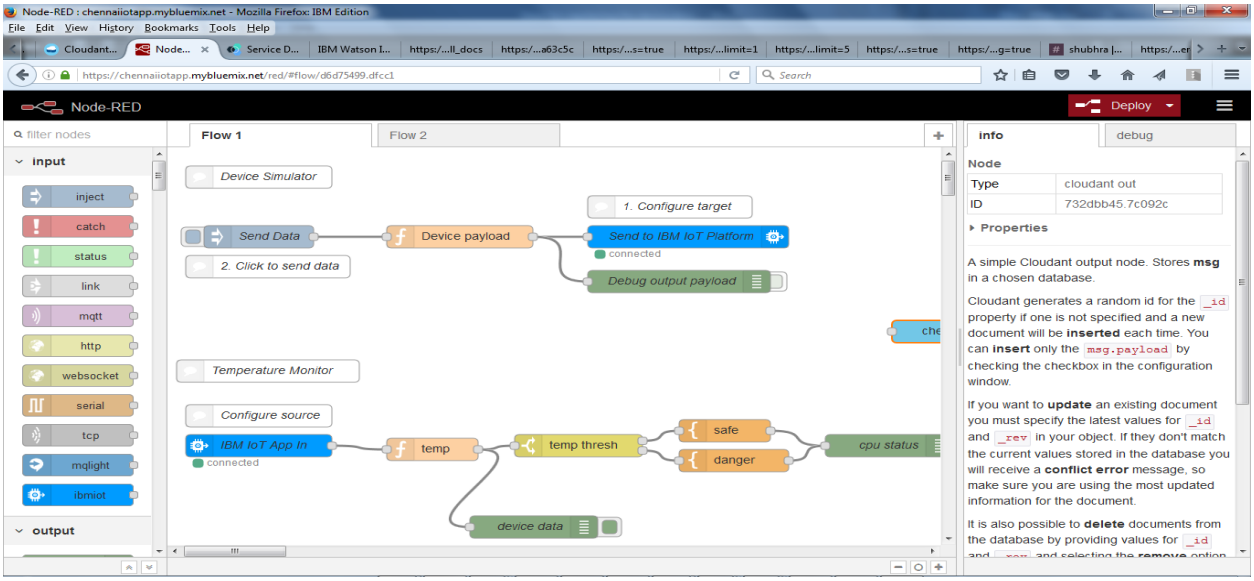
We will now open the url/route, that we created while spinning up the IOT application using the Boilerplate on Bluemix.

The route will be something like- www.XXYYZZ.mybluemix.net or www.XXYYZZ.eu-gb.mybluemix.net or www.XXYYZZ.au-syd.mybluemix.net, depending upon the endpoint of Bluemix hosted.

Click on **GO TO YOUR NODE-RED FLOW EDITOR.**

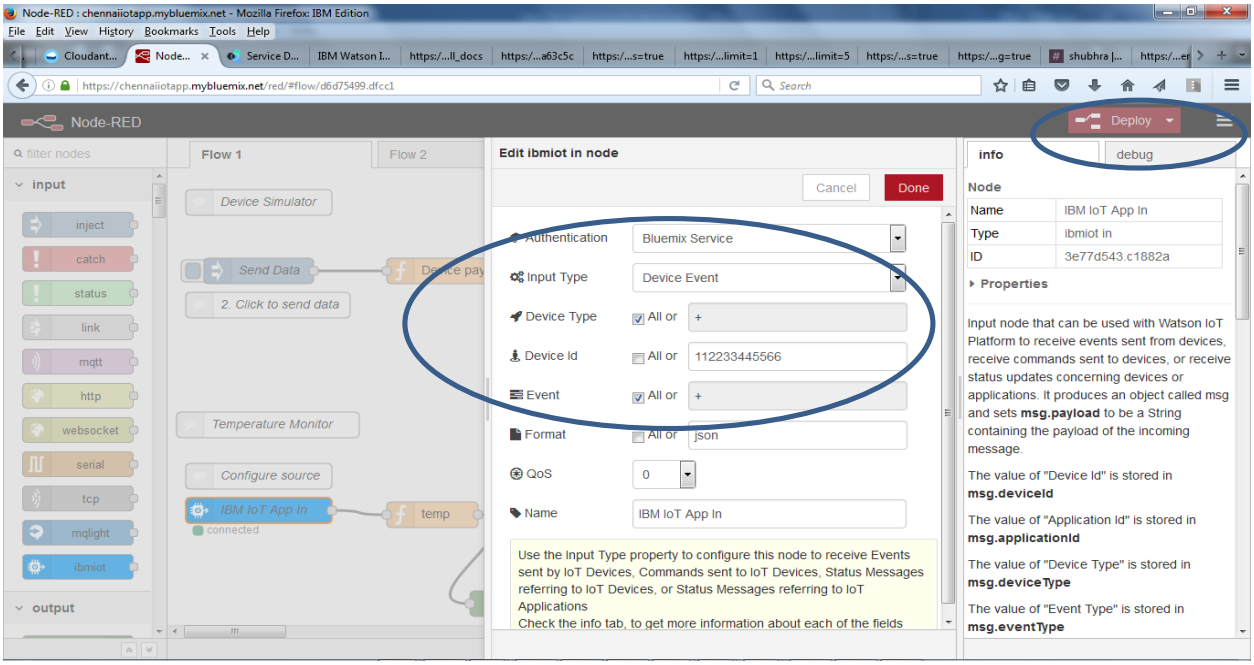


Step -16 - Once the **NODE RED flow editor** is loaded, you should be able to see few flows on the editor.

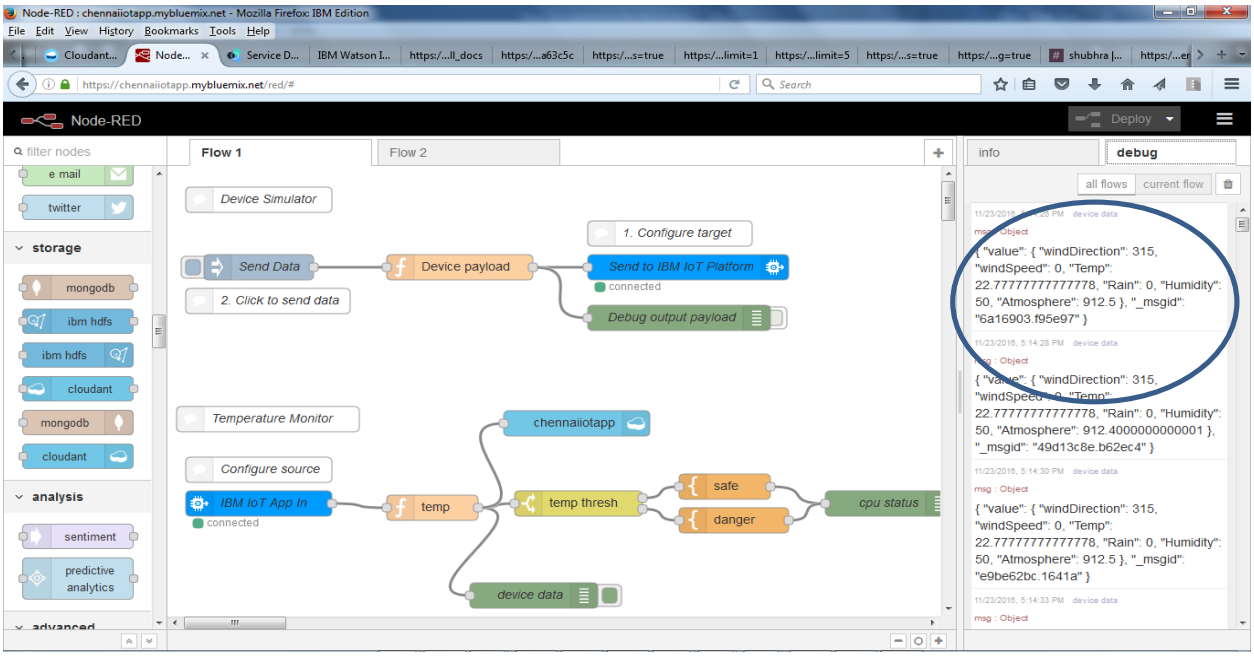


Step- 17 - Click on the node titled **IBM IOT App In**, and make necessary changes as shown below. Ensure the **Authentication is BLUEMIX SERVICE**, **Input Type is DEVICE EVENT** and you have mentioned the **DEVICE ID** as mentioned in **step – 12**. Once finished click on **DONE**.

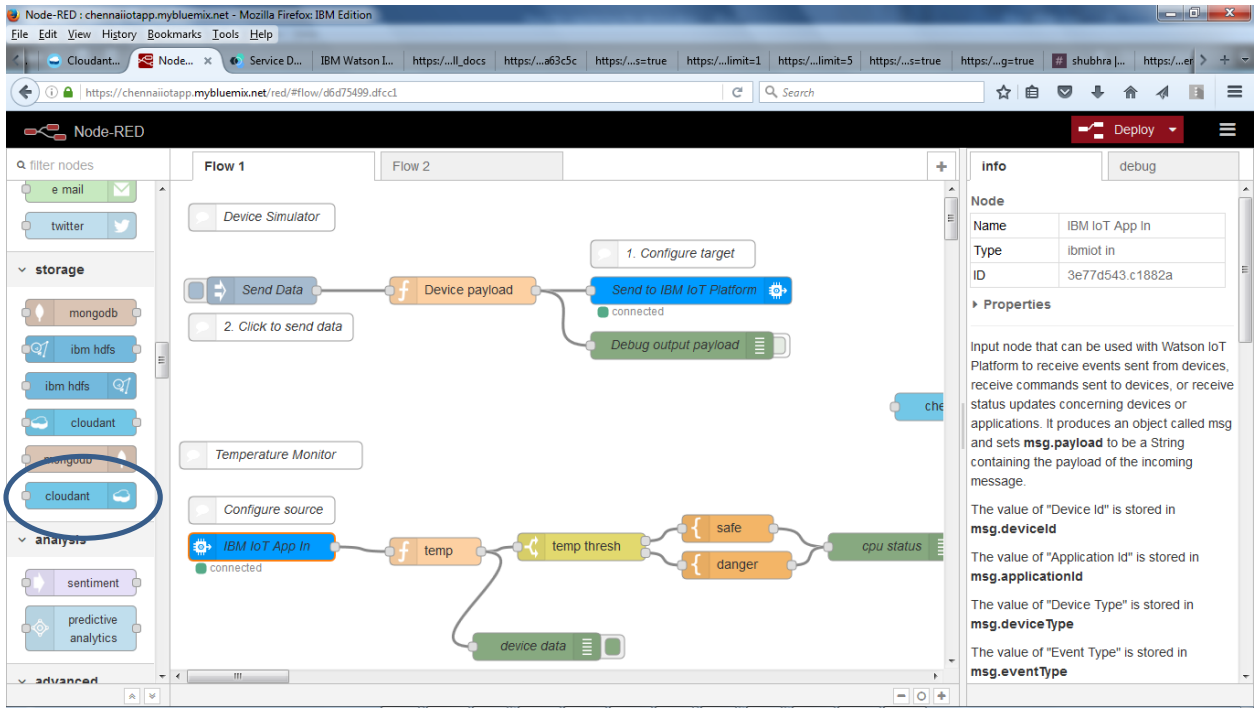
Click on the **DEPLOY** button on the TOP RIGHT Corner of the window and *wait for the successful deployment message appearing in the middle of the screen on the top.*



Step -18 – Click on the **DEBUG** tab on the *RIGHT Panel* and you should be able to see the sensor data flowing in as shown below.

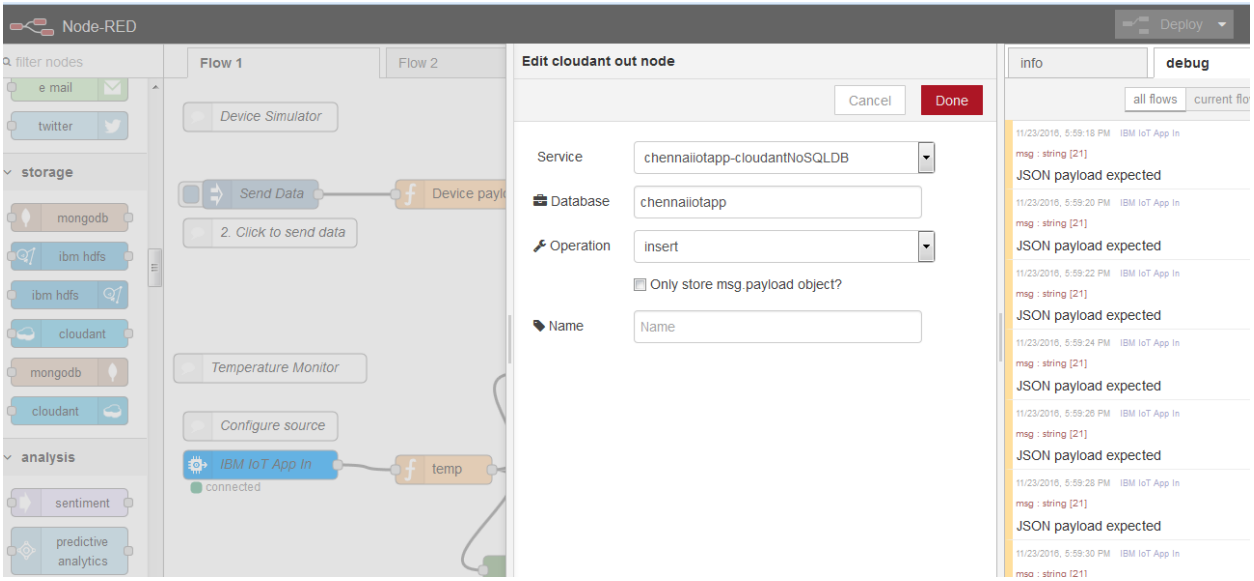


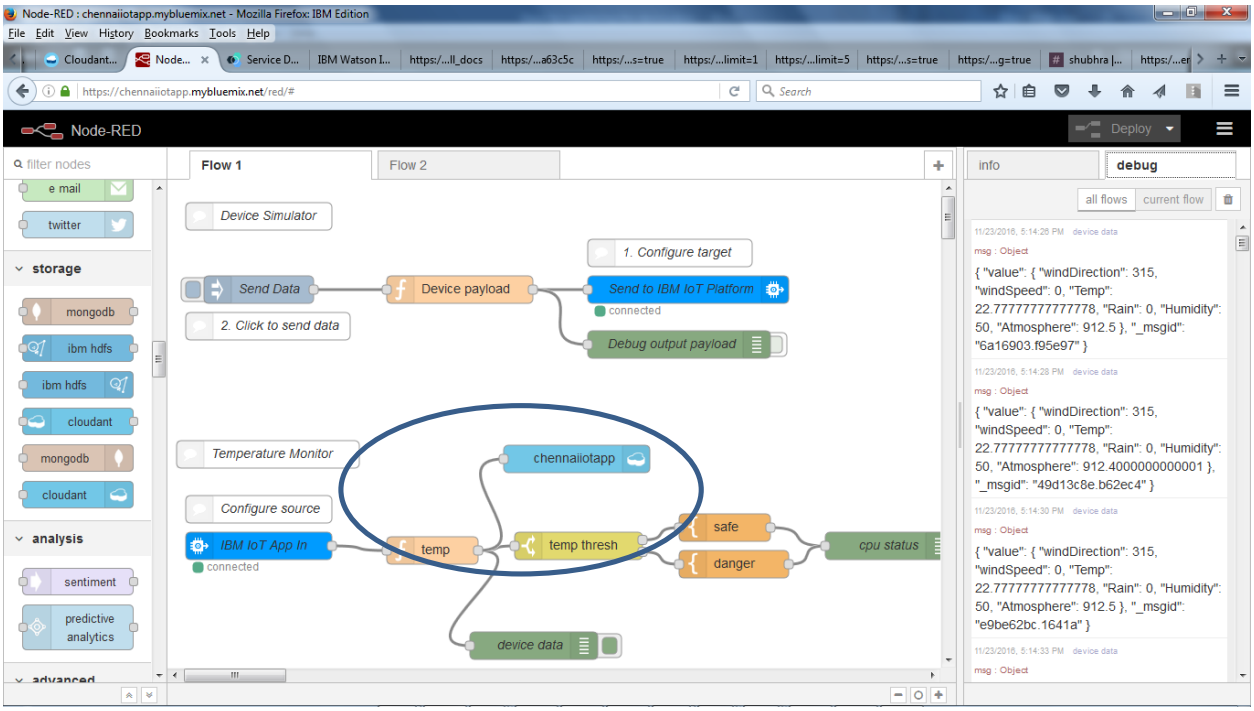
Step -19 – We will now push this incoming sensor data in Cloudant database. Scroll down on the *LEFT panel*, in the **STORAGE** option locate **Cloudant** and drag the same to the flow.



Step -20 – *Connect the storage node as shown in the figure below* and name it appropriately. Double click on the node to **name the DB** and click on **DONE** once finished, complete the changes by clicking on **DEPLOY** on the top right corner.

Wait for the successful deployment message on the top middle of the page.




Node-RED : chennaiiotapp.mybluemix.net - Mozilla Firefox: IBM Edition
File Edit View History Bookmarks Tools Help
https://chennaiiotapp.mybluemix.net/red/#
Node-RED
Deploy
filter nodes
e mail
twitter
storage
mongodb
ibm hdfs
ibm hdfs
cloudant
mongodb
cloudant
analysis
sentiment
predictive analytics
advanced
Flow 1
Flow 2
Device Simulator
Send Data
Device payload
1. Configure target
Send to IBM IoT Platform
connected
2. Click to send data
Debug output payload
Temperature Monitor
chennaiiotapp
Configure source
IBM IoT App In
connected
temp
temp thresh
safe
danger
cpu status
device data
info
debug
all flows
current flow
11/23/2016, 5:14:28 PM device data
msg : Object
{ "value": { "windDirection": 315, "windSpeed": 0, "Temp": 22.77777777777778, "Rain": 0, "Humidity": 50, "Atmosphere": 912.5 }, "_msgid": "6a16903.f95e97" }
11/23/2016, 5:14:28 PM device data
msg : Object
{ "value": { "windDirection": 315, "windSpeed": 0, "Temp": 22.77777777777778, "Rain": 0, "Humidity": 50, "Atmosphere": 912.4000000000001 }, "_msgid": "49d13c8e.b62ec4" }
11/23/2016, 5:14:30 PM device data
msg : Object
{ "value": { "windDirection": 315, "windSpeed": 0, "Temp": 22.77777777777778, "Rain": 0, "Humidity": 50, "Atmosphere": 912.5 }, "_msgid": "e9be62bc.1641a" }
11/23/2016, 5:14:33 PM device data
msg : Object