

IOT ENABLED SMART FARMINGAPPLICATION

SPRINT DELIVERY – 2

Date	17.11.2022
Team ID	PNT2022TMID06965
Project Name	SMART FARMER - IOT ENABLED SMART FARMINGAPPLICATION SYSTEM

Building Project

Connecting IoT Simulator to IBM Watson IoT Platform

Open link provided in above section 4.3

Give the credentials of your device in IBM Watson IoT Platform

Click on connect

My credentials given to simulator are:

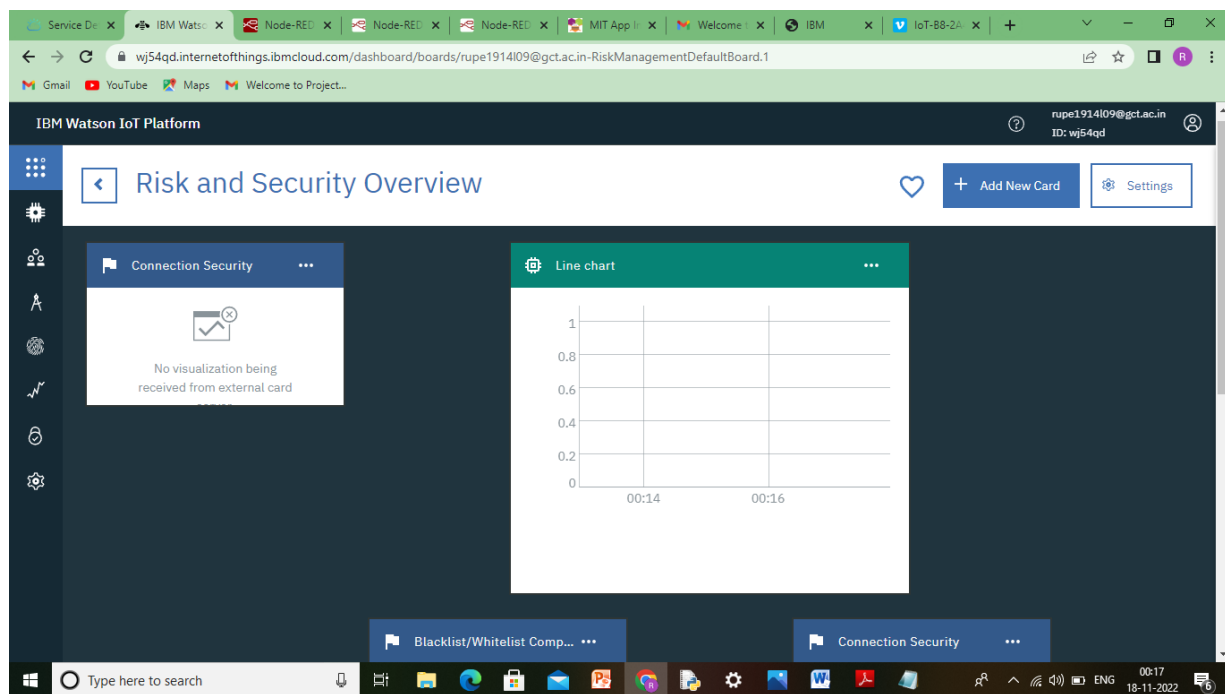
OrgID: wj54qd

api: a-wj54qd-9qn7eau55k

Device type: abc

Device ID : 123

Device Token : 12345678



You can see the received data in graphs by creating cards in Boards tab

- You will receive the simulator data in cloud
- You can see the received data in Recent Events under your device

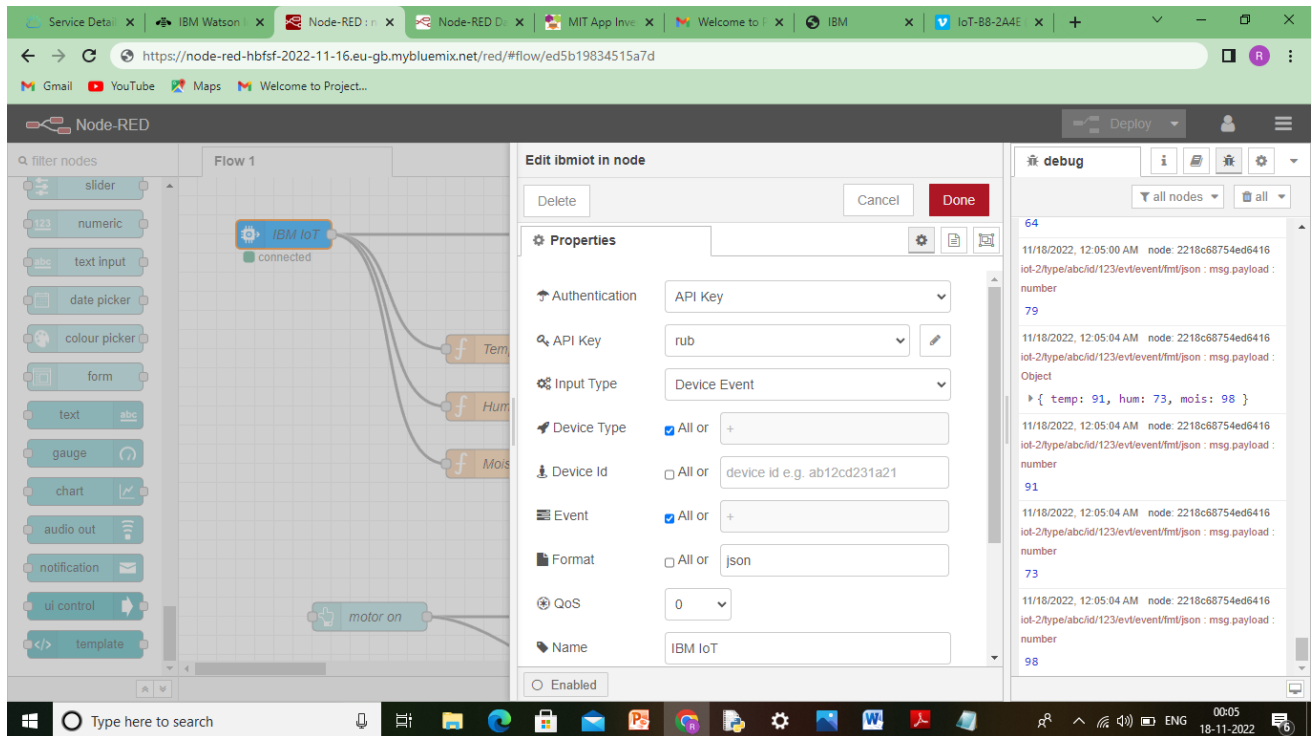
➤ Data received in this format(json)

```
{  
  "d": {  
    "name": "abc",  
    "temperature": 95,  
    "humidity": 64,  
    "Moisture ": 21  
  }  
}
```

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes tabs for 'Service Details', 'IBM Watson IoT', 'Node-RED', 'MIT App Inventor', and 'Welcome to Project...'. The main header shows the user 'rupe1914l09@gct.ac.in' with ID 'wj54qd'. The left sidebar contains icons for various IoT functions. The main content area is titled 'Recent Events' and shows a table of live data streams. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. It lists four events, each with a JSON value containing temperature, humidity, and moisture data. The bottom of the dashboard shows pagination controls indicating '1 of 1 page'.

Event	Value	Format	Last Received
event	{"temp":90,"hum":65,"mois":82}	json	a few seconds ago
event	{"temp":108,"hum":88,"mois":118}	json	a few seconds ago
event	{"temp":97,"hum":78,"mois":106}	json	a few seconds ago
event	{"temp":95,"hum":64,"mois":21}	json	a few seconds ago

Configuration of Node-Red to collect IBM cloud data



The node IBM IoT App In is added to Node-Red workflow. Then the appropriate device credentials obtained earlier are entered into the node to connect and fetch device telemetry to Node-Red.

Once it is connected Node-Red receives data from the device

Display the data using debug node for verification

Connect function node and write the Java script code to get each reading separately.

The Java script code for the function node is:

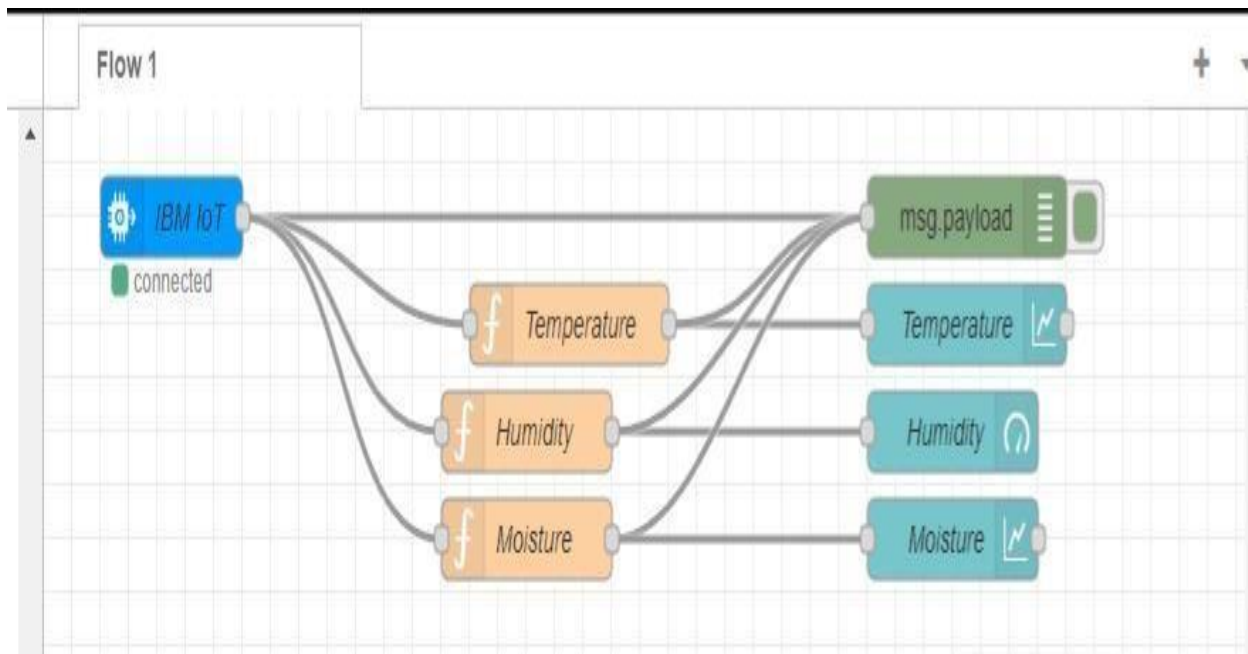
```
msg.payload=msg.payload.d.temperature return msg;
```

Finally connect Gauge nodes from dashboard to see the data in UI

The screenshot shows a web browser with multiple tabs. The active tab is 'Node-RED : node-red-hdyfv-2022-10-01.eu-gb.mybluemix.net/ui/#/1?socketid=CF6nygxyzmjQZo7UAAAP'. The browser displays a Node-RED dashboard with a blue header and a white body. On the left, there is a sidebar with a menu icon and the text 'FAR'. The main area shows a list of sensor data entries, each containing temperature and humidity readings, and a status message 'Published Temperature = ... C Humidity = ... % to IBM Watson'. A terminal window is open in the foreground, displaying the same data as the dashboard.

```
C:\WINDOWS\py.exe
Published Temperature = 109 C Humidity = 64 % to IBM Watson
Published Temperature = 105 C Humidity = 86 % to IBM Watson
Published Temperature = 105 C Humidity = 83 % to IBM Watson
Published Temperature = 102 C Humidity = 86 % to IBM Watson
Published Temperature = 103 C Humidity = 60 % to IBM Watson
Published Temperature = 106 C Humidity = 83 % to IBM Watson
Published Temperature = 101 C Humidity = 85 % to IBM Watson
Published Temperature = 106 C Humidity = 84 % to IBM Watson
Published Temperature = 95 C Humidity = 74 % to IBM Watson
Published Temperature = 107 C Humidity = 73 % to IBM Watson
Published Temperature = 92 C Humidity = 96 % to IBM Watson
Published Temperature = 93 C Humidity = 82 % to IBM Watson
Published Temperature = 98 C Humidity = 80 % to IBM Watson
Published Temperature = 107 C Humidity = 71 % to IBM Watson
Published Temperature = 94 C Humidity = 87 % to IBM Watson
Published Temperature = 106 C Humidity = 76 % to IBM Watson
Published Temperature = 98 C Humidity = 81 % to IBM Watson
Published Temperature = 103 C Humidity = 95 % to IBM Watson
Published Temperature = 92 C Humidity = 66 % to IBM Watson
Published Temperature = 99 C Humidity = 76 % to IBM Watson
Published Temperature = 93 C Humidity = 68 % to IBM Watson
```

Data received from the cloud in Node-Red console



Nodes connected in following manner to get each reading separately

Service Details x IBM Watson x Node-RED: r x Node-RED D: x MIT App Inve x Welcome to x IBM x IoT-B8-2A4E x +

https://node-red-hbfsf-2022-11-16.eu-gb.mybluemix.net/red/#flow/ed5b19834515a7d

Gmail YouTube Maps Welcome to Project...

Node-RED

filter nodes

Flow 1

IBM IoT connected

motor on

Temp

Humid

Moist

Properties

Delete Cancel Done

Size auto

Label Temperature

Type Line chart

X-axis last 5 minute: OR

X-axis Label HH:mm:ss

Y-axis min max

Legend None Interpolate

Series Colours

Enabled

debug

all nodes all

61

11/18/2022, 12:07:09 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
number

46

11/18/2022, 12:07:13 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
temp: 101, hum: 97, mois: 105 }

22, 12:07:13 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
number

105

Type here to search

00:07 18-11-2022

Service Details x IBM Watson x Node-RED: r x Node-RED D: x MIT App Inve x Welcome to x IBM x IoT-B8-2A4E x +

https://node-red-hbfsf-2022-11-16.eu-gb.mybluemix.net/red/#flow/ed5b19834515a7d

Gmail YouTube Maps Welcome to Project...

Node-RED

filter nodes

Flow 1

IBM IoT connected

motor on

Properties

Delete Cancel Done

Name Temperature

Setup On Start On Message On Stop

```
1 msg.payload=msg.payload.temp
2 global.set("t",msg.payload)
3 return msg;
```

Enabled

debug

all nodes all

86

11/18/2022, 12:08:54 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
number

42

11/18/2022, 12:08:57 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
Object

{ temp: 109, hum: 79, mois: 28 }

11/18/2022, 12:08:57 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
number

109

11/18/2022, 12:08:57 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
number

79

11/18/2022, 12:08:57 AM node: 2218c68754ed6416
iot-2/type/abcId/123/evl/event/fmt/json : msg.payload :
number

28

Type here to search

00:09 18-11-2022