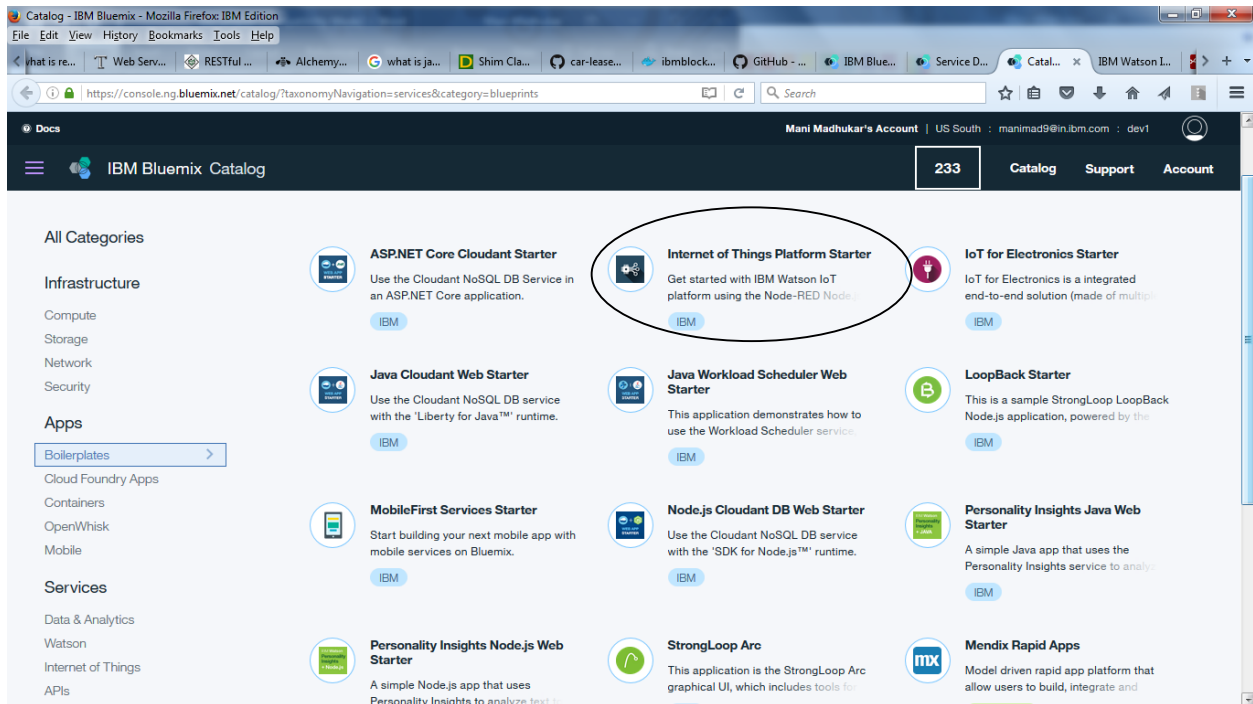


Step-1- Sign in to Bluemix www.bluemix.net with your registered email id and password.

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.XXYZZ.mybluemix.net or www.XXYZZ.eu-gb.mybluemix.net or www.XXYZZ.au-syd.mybluemix.net, depending upon the endpoint of Bluemix hosted

IBM Bluemix Catalog

SupportAccount

View All

Create a Cloud Foundry Application

Internet of Things Platform Starter

Get started with IBM Watson IoT platform using the Node-RED Node.js sample application. With the Starter, you can quickly simulate an Internet of Things device, create cards, generate data, and begin analyzing and displaying data in the Watson IoT Platform dashboard.

IBM

View Docs

App name:

Enter a unique name

Host name:

Enter a unique name

Domain:

mybluemix.net

Selected Plan:

SDK for Node.js™

Default

Cloudant NoSQL DB

Lite

Internet of Things Platform

Need Help?
Contact Bluemix Sales

Estimate Monthly Cost
Cost Calculator

Create

Enter unique name for the application, the name should be unique

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

Docs

Mani Madhukar's Account | US South : manimad9@in.ibm.com : dev1

233

Catalog

Support

Account

Dashboard

Getting Started

Overview

Runtime

Connections

Logs

Monitoring

chennaiiotapp

Status: ● Your app is running

View App

Getting started with Watson IoT Platform Starter

Last updated: 27 June 2016 | [Edit In GitHub](#)

Get started with IBM® Watson™ IoT Platform by using the Watson IoT Platform Starter boilerplate. With the Starter, you can quickly simulate a device, create cards, generate data, and begin analyzing and displaying data in the Watson IoT Platform dashboard.

The Starter automatically deploys and connects these services:

Watson IoT Platform - The platform gives you a versatile IoT toolkit that includes gateway devices, device management, and powerful application access. By using Watson IoT Platform, you can collect connected device data and perform analytics on real-time data from your organization.

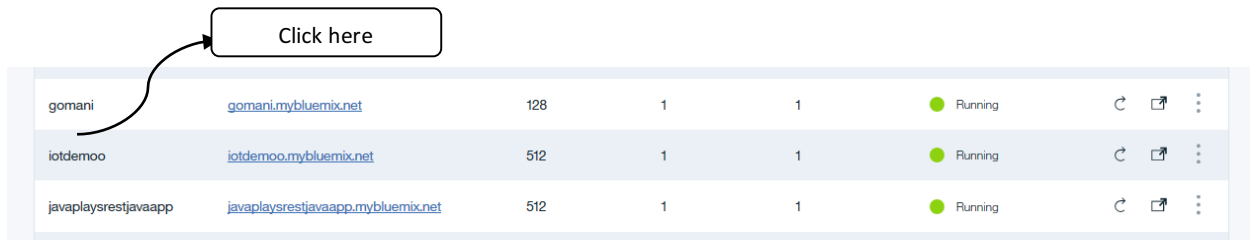
IBM® SDK for Node.js for Bluemix® - creates a runtime environment in which Node-RED runs.

IBM® Cloudant® NoSQL DB for Bluemix® - a database in which Node-RED stores metadata.

About Watson IoT Platform

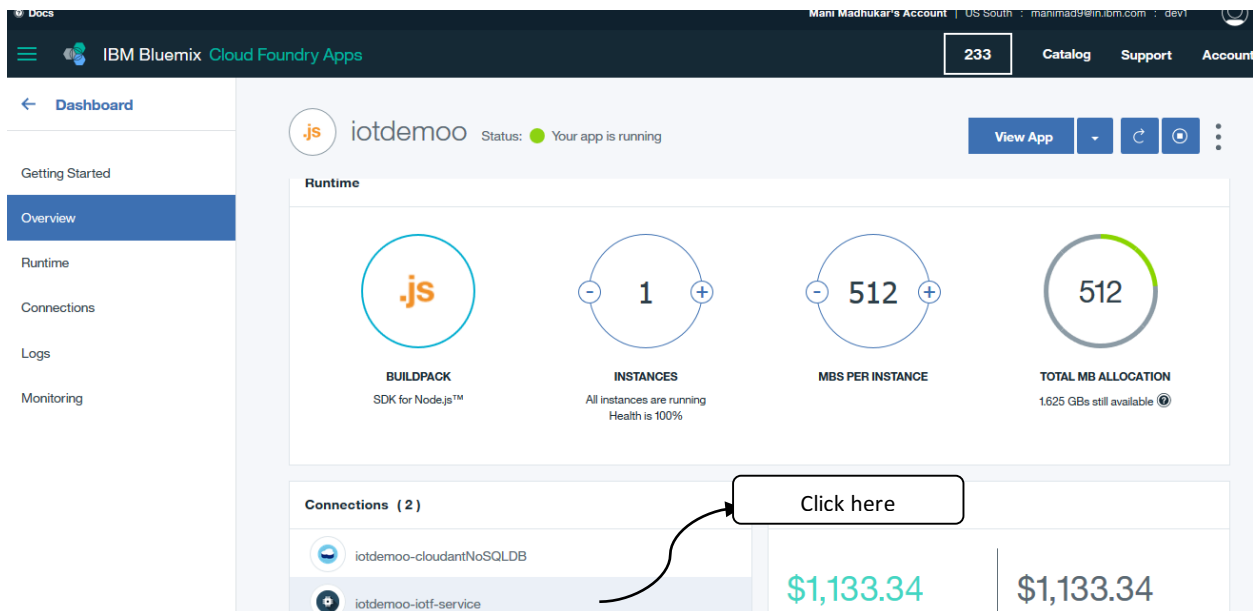
Step – 5- Click on the **OVERVIEW** on the left panel.

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



gomani	gomani.mybluemix.net	128	1	1	Running			
iotdemoo	iotdemoo.mybluemix.net	512	1	1	Running			
javaplaysrestjavaapp	javaplaysrestjavaapp.mybluemix.net	512	1	1	Running			

Figure 1. Dashboard view of all running applications




IBM Bluemix Cloud Foundry Apps | 233 | Catalog | Support | Account

← Dashboard

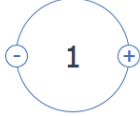
- Getting Started
- Overview**
- Runtime
- Connections
- Logs
- Monitoring

iotdemoo Status: ● Your app is running View App


Runtime




BUILDPACK
SDK for Node.js™



INSTANCES
All instances are running
Health is 100%



MBS PER INSTANCE



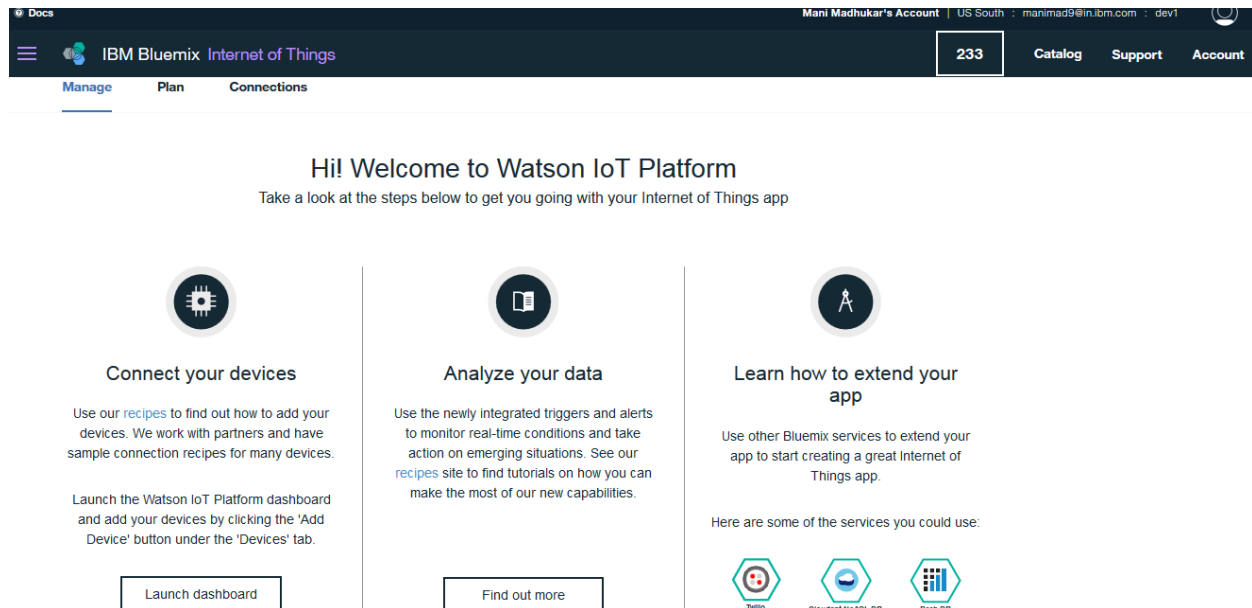
TOTAL MB ALLOCATION
1,625 GBs still available ⓘ

Connections (2)

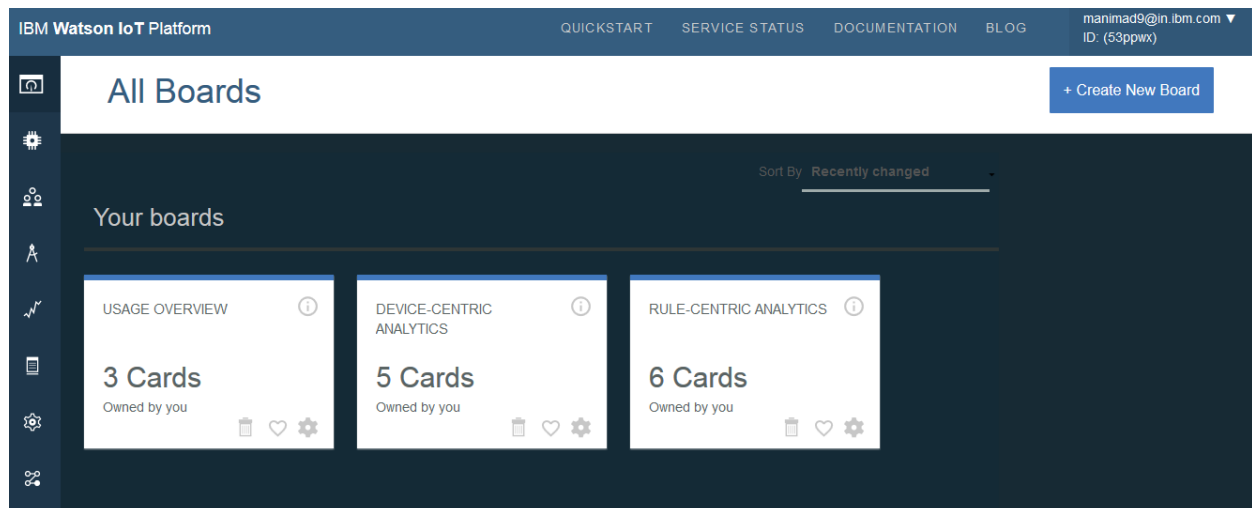
	iotdemoo-cloudantNoSQLDB		
	iotdemoo-iotf-service	\$1,133.34	\$1,133.34

Figure 2 View of Application console from OVERVIEW tab

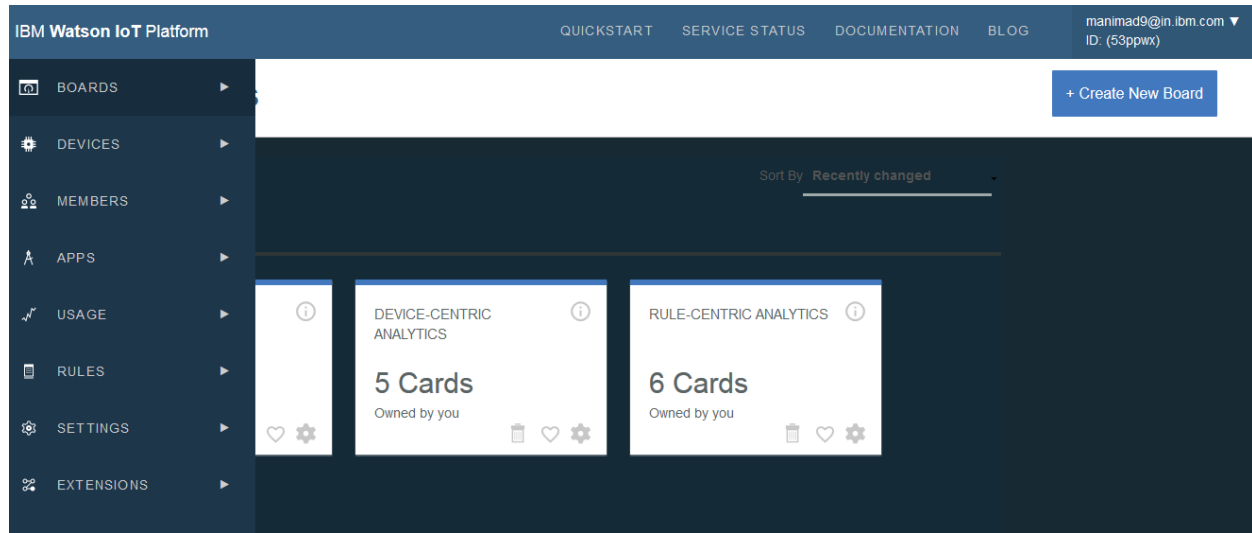
Step- 6- Click on **IOT foundation service**, you should get the view of the available components in the IOTF service as below –



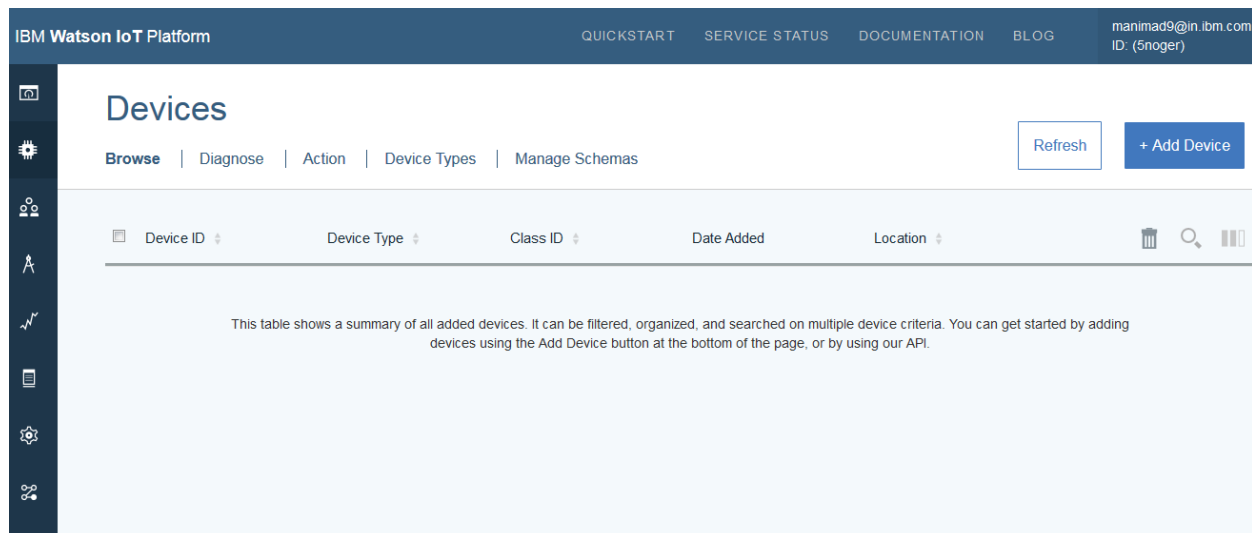
Step – 7 - We need to register the gateway sensor/devices with the IOT Foundation service to retrieve the data from the sensors. Click on **LAUNCH DASHBOARD**.



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.

The screenshot shows the 'Add Device' page in the AWS IoT Platform console. On the left is a dark sidebar with the 'Devices' menu and sub-items: 'Choose Device Type', 'Device Info', 'Metadata', 'Security', and 'Summary'. The main content area is titled 'Add Device' and contains two input fields, both labeled 'Choose Device Type', each with an information icon. Below these fields is a button labeled 'Create device type'. To the right of the main content is a dark sidebar with a close button at the top and a 'Next' button at the bottom.

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.

The screenshot shows the 'Create Device Type' page in the AWS IoT Platform console. On the left is a dark sidebar with the 'Devices' menu and sub-items: 'Create Type', 'General Information', 'Define Template', 'Submit Information', and 'Metadata'. The main content area is titled 'Create Device Type' and contains a 'Create Type' label with an information icon. Below this are two buttons: 'Create device type' and 'Create gateway type'. To the right of the main content is a dark sidebar with a close button at the top, a search bar, and a 'Next' button at the bottom.

The screenshot shows the 'Add Device' form with the 'Choose Device Type' step selected in the left sidebar. The main content area has a header 'Add Device' and a sub-header 'Choose Device Type' with an information icon. Below this is a dropdown menu currently showing 'WeatherSensorGateway'. A 'Create device type' button is at the bottom. The right sidebar shows a 'Next' button at the bottom.

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.

The screenshot shows the 'Add Device' form with the 'Device Info' step selected in the left sidebar, indicated by a green checkmark. The main content area has a header 'Add Device' and a sub-header 'Device Info'. Below this is a text box explaining that the Device ID is the only required information. A 'Device ID' field contains the value '112233445566'. Below this is a section for 'Additional fields'. The right sidebar shows 'Back' and 'Next' buttons at the bottom.

Add Device

Security

You have two options:

Auto-generated authentication token

Allow the service to generate an authentication token for you. The token will be 18 characters long and will contain a mix of alphanumeric characters and symbols. The token will be returned to you at the end of the registration process.

Self-provided authentication token

Provide your own authentication token for this device. The token must be between 8 and 36 characters long, and should contain a mix of lower and upper case letters, numbers, and symbols (hyphen, underscore, exclamation-point, ampersand, at sign, question mark, period, right and left parentheses are permitted). The token should be free of repetition, dictionary words, user names, and other predefined sequences.

Provide a token (optional)

Authentication tokens are encrypted before we store them.

We are not able to recover lost authentication tokens. Ensure you make a note of the authentication token after clicking Add.

Back Next

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.

Gateway 112233445566

Your Device Credentials

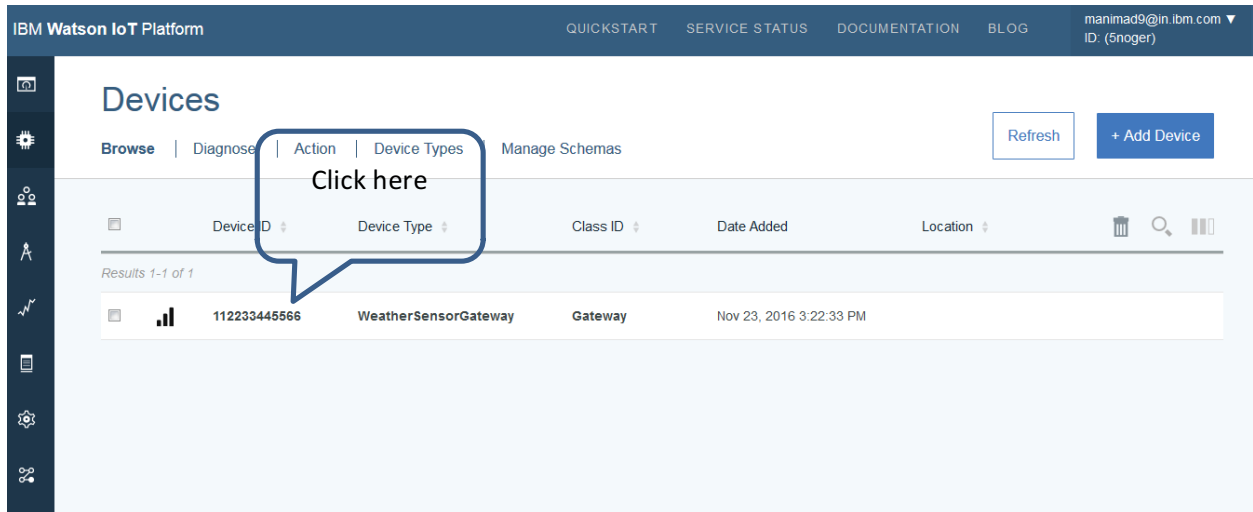
You have registered your device to the organization. To get it connected, you need to add these credentials to your device. Once you've added these, you should see the messages sent from your device in the 'Sensor Information' section on this page.

Organization ID	5noger
Device Type	WeatherSensorGateway
Device ID	112233445566
Authentication Method	token
Authentication Token	weathersensorgateway

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the device to generate a new authentication token.

Refresh

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

QUICKSTART SERVICE STATUS DOCUMENTATION BLOG manimad9@in.ibm.com ID: (5noger)

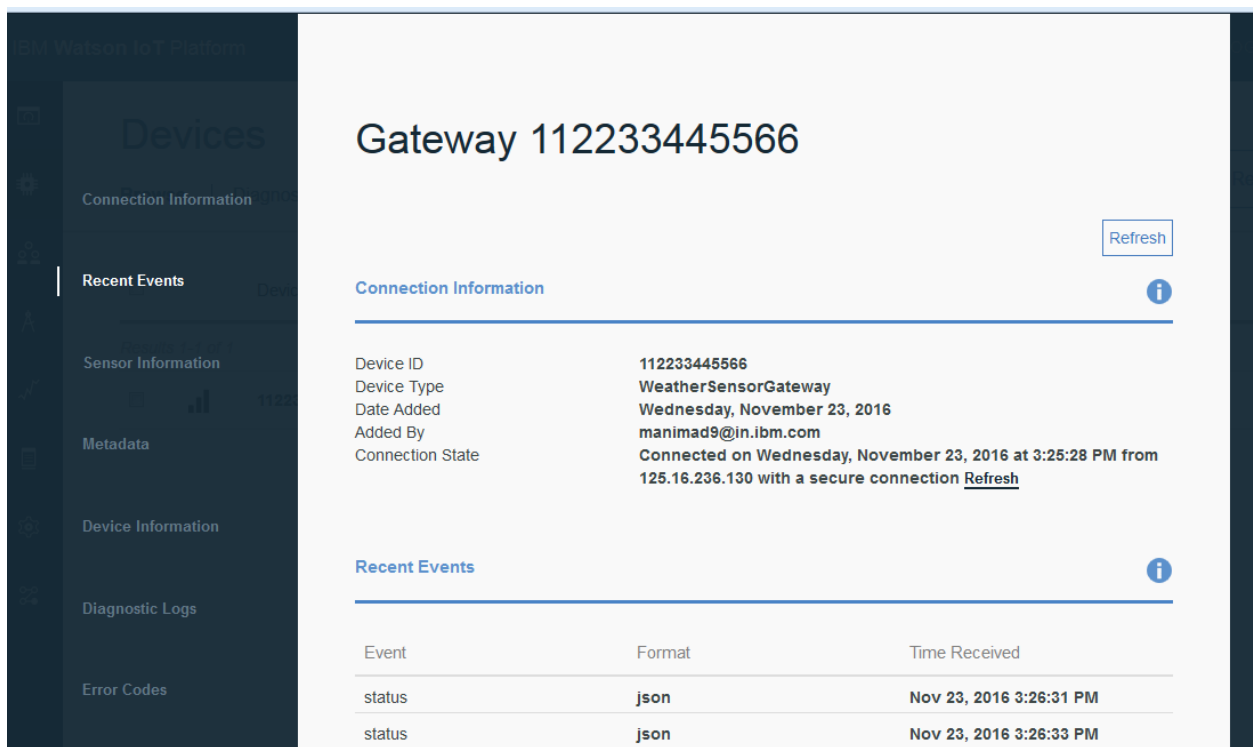
Devices

Browse | Diagnose | Action | Device Types | Manage Schemas

Refresh + Add Device

Device ID	Device Type	Class ID	Date Added	Location
112233445566	WeatherSensorGateway	Gateway	Nov 23, 2016 3:22:33 PM	

Results 1-1 of 1



Gateway 112233445566

Refresh

Connection Information

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 3:26:31 PM
status	json	Nov 23, 2016 3:26:33 PM

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

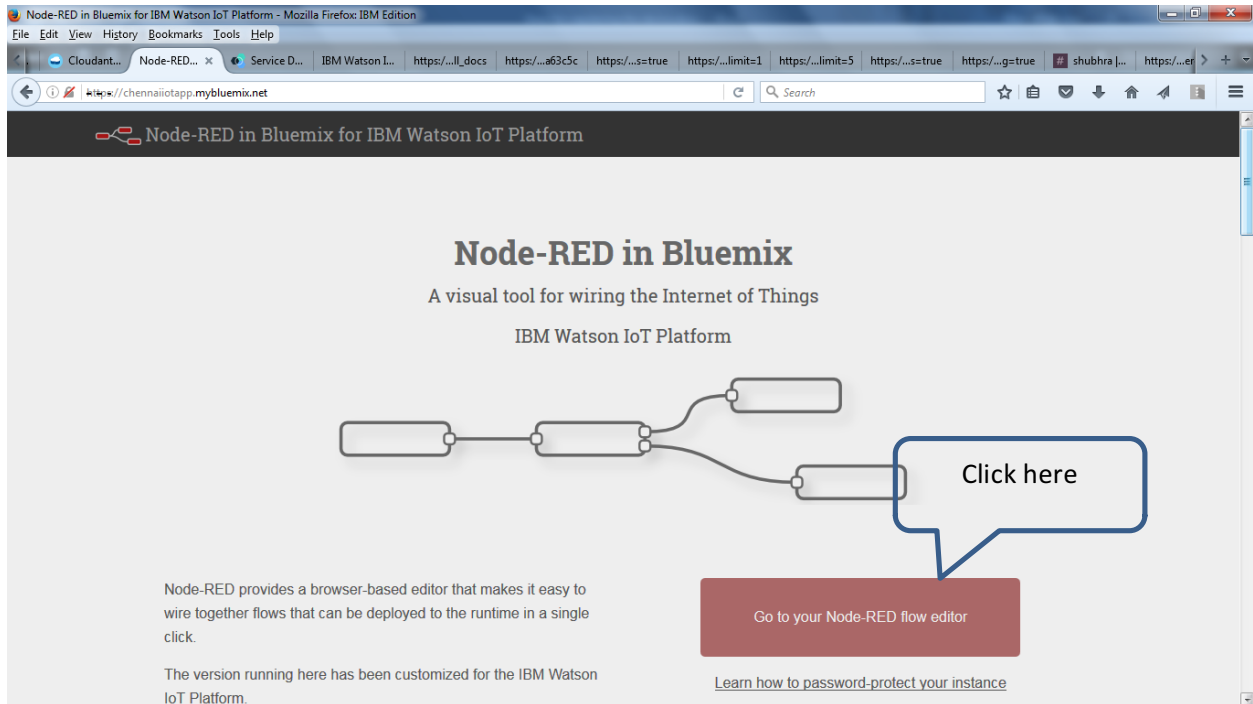
Metadata

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

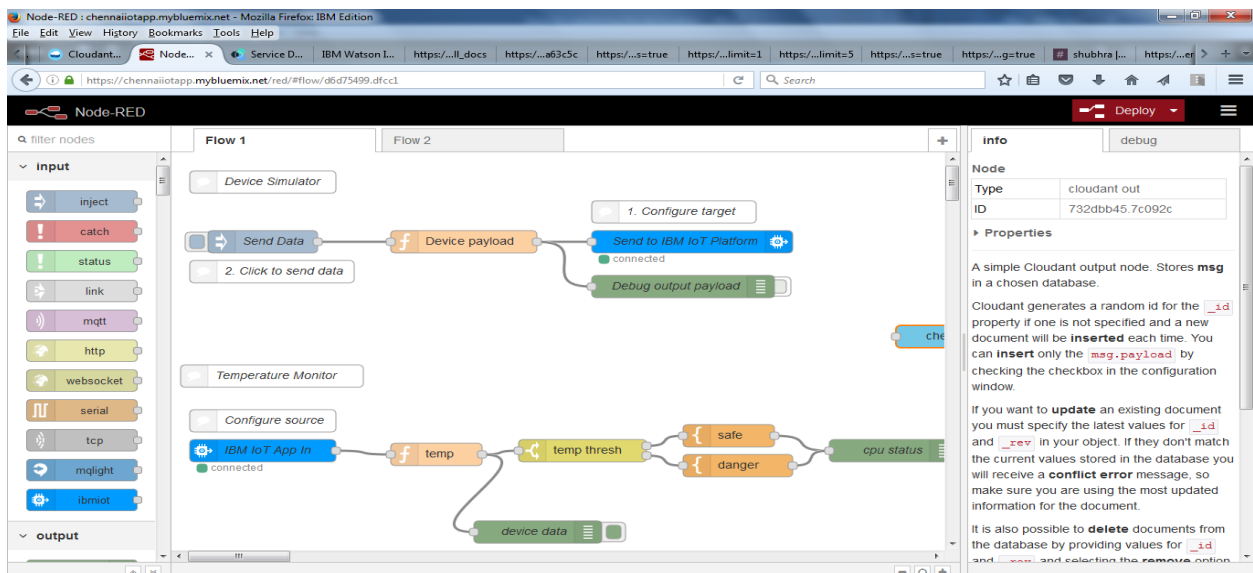
We will now open the url/route, that we created while spinning up the IOT application using the Boilerplate on Bluemix.

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**.

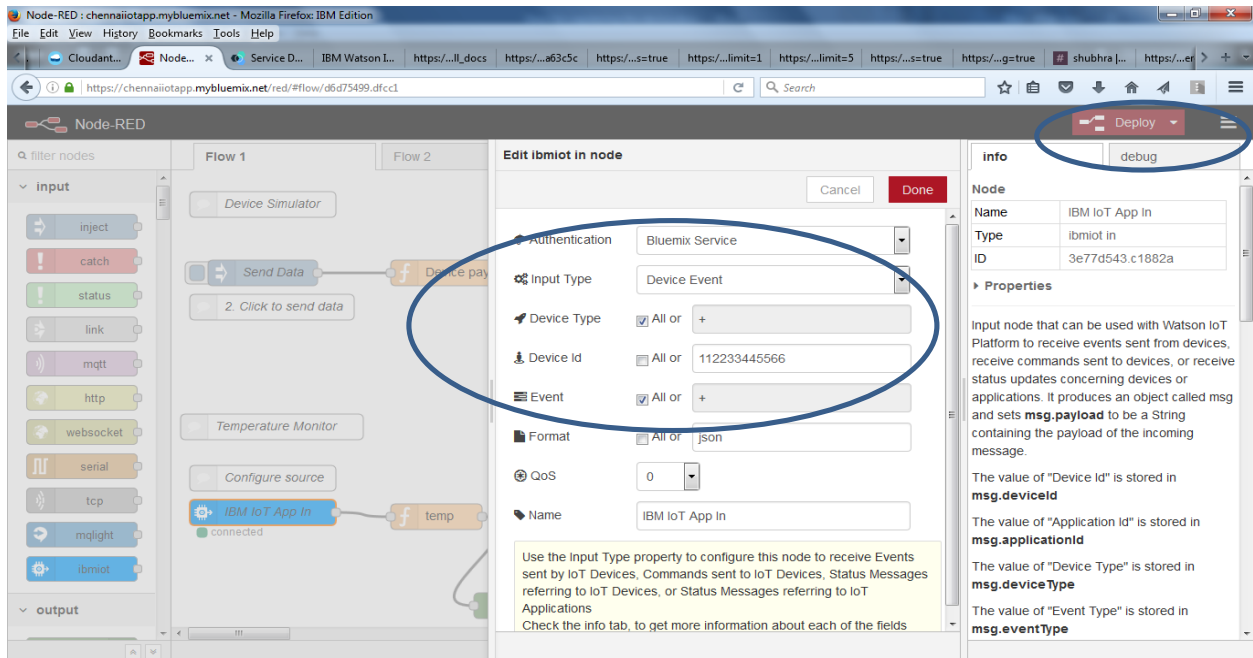


Step -16 - Once the **NODE RED flow editor** is loaded, you should be able to see few flows on the editor.

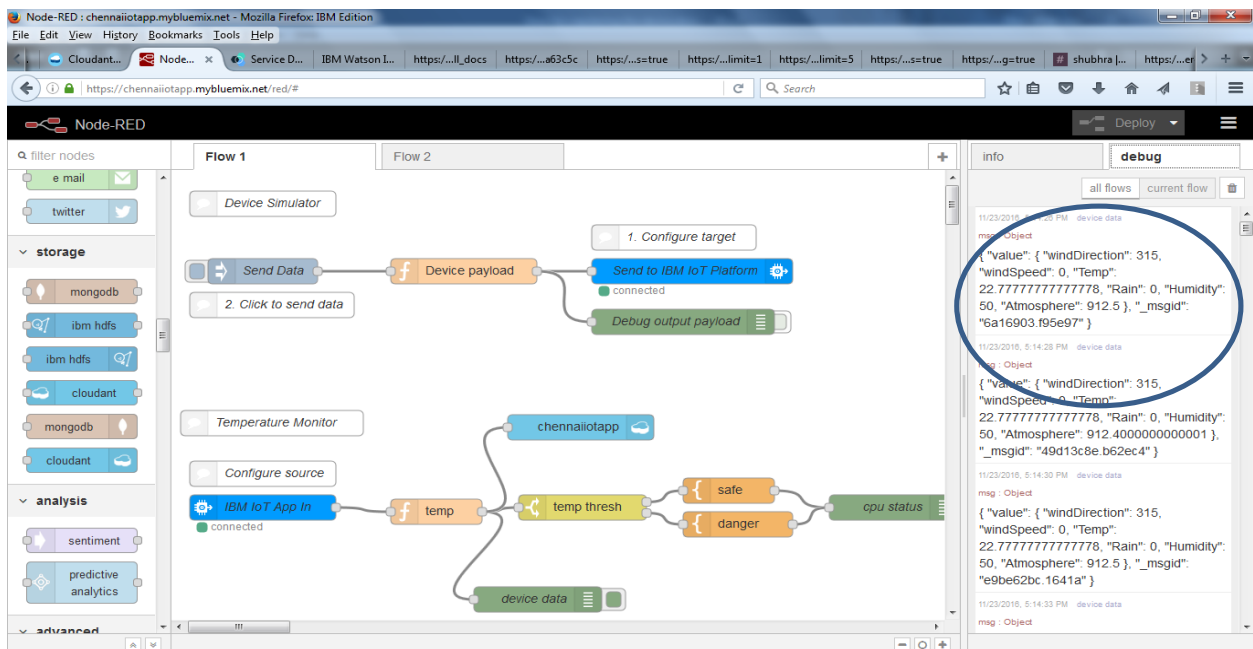


Step- 17 - Click on the node titled **IBM IoT App In**, and make necessary changes as shown below. Ensure the **Authentication** is **BLUEMIX SERVICE**, **Input Type** is **DEVICE EVENT** and you have mentioned the **DEVICE ID** as mentioned in **step – 12**. Once finished click on **DONE**.

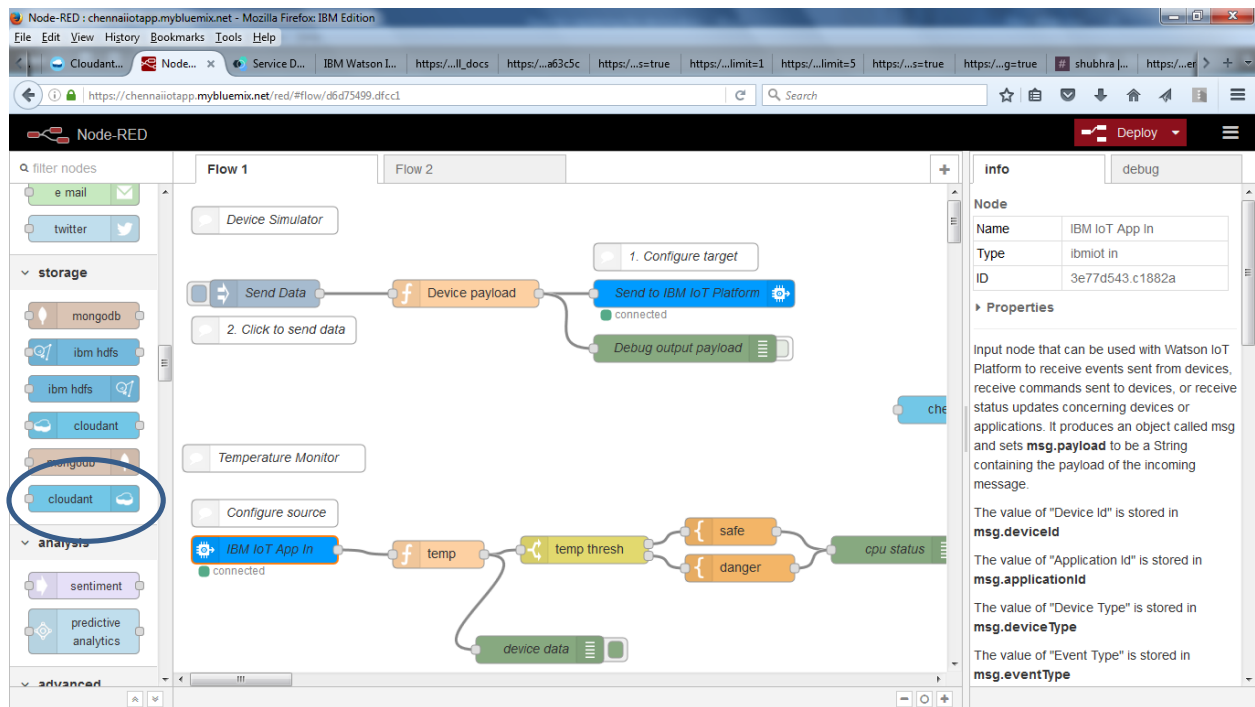
Click on the **DEPLOY** button on the TOP RIGHT Corner of the window and *wait for the successful deployment message appearing in the middle of the screen on the top*.



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.

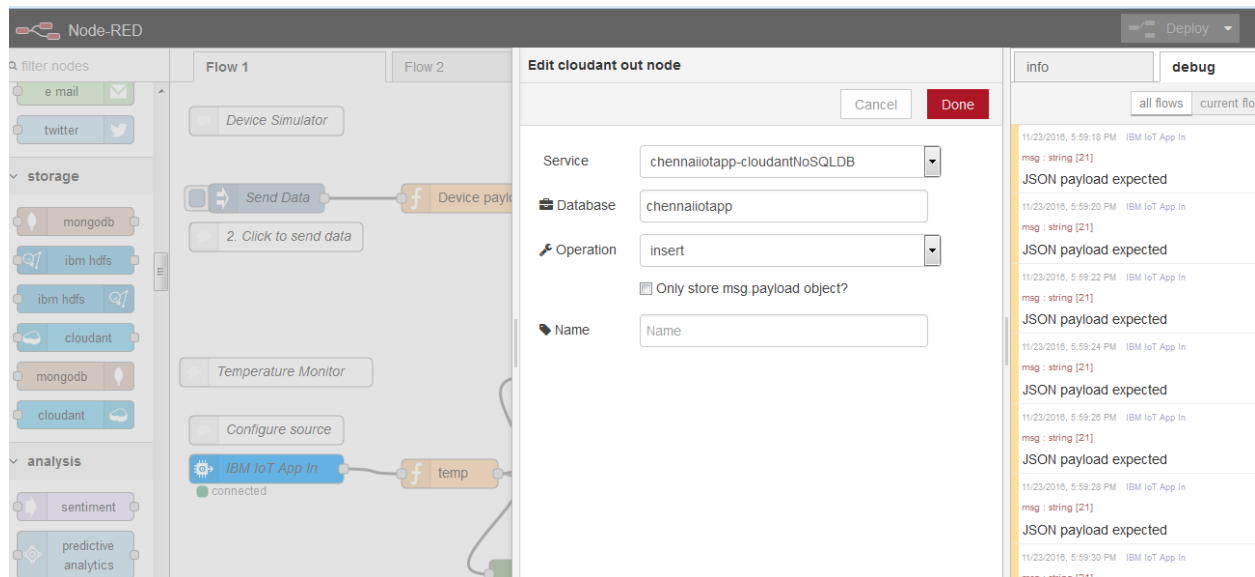


Step -19 – We will now push this incoming sensor data in Cloudant database. Scroll down on the *LEFT panel*, in the **STORAGE** option locate **Cloudant** and drag the same to the flow.



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

Cloudant... Node... Service D... IBM Watson L... https://...ll_docs https://...a63c5c https://...s=true https://...limit=1 https://...limit=5 https://...s=true https://...g=true shubhra J... https://...e

https://chennaiiotapp.mybluemix.net/red/#

Node-RED

filter nodes

- e mail
- twitter
- storage
 - mongodb
 - ibm hdfs
 - cloudant
- analysis
 - sentiment
 - predictive analytics
- advanced

Flow 1

Device Simulator

Send Data

Device payload

1. Configure target

Send to IBM IoT Platform

connected

Debug output payload

2. Click to send data

Temperature Monitor

chennaiiotapp

temp

temp thresh

safe

danger

cpu status

device data

info

debug

all flows current flow

```
msg: Object
{
  "value": {
    "windDirection": 315,
    "windSpeed": 0,
    "Temp": 22.77777777777778,
    "Rain": 0,
    "Humidity": 50,
    "Atmosphere": 912.5,
    "_msgid": "6a16903.f95e97"
  }
}

11/23/2016, 5:14:29 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
```