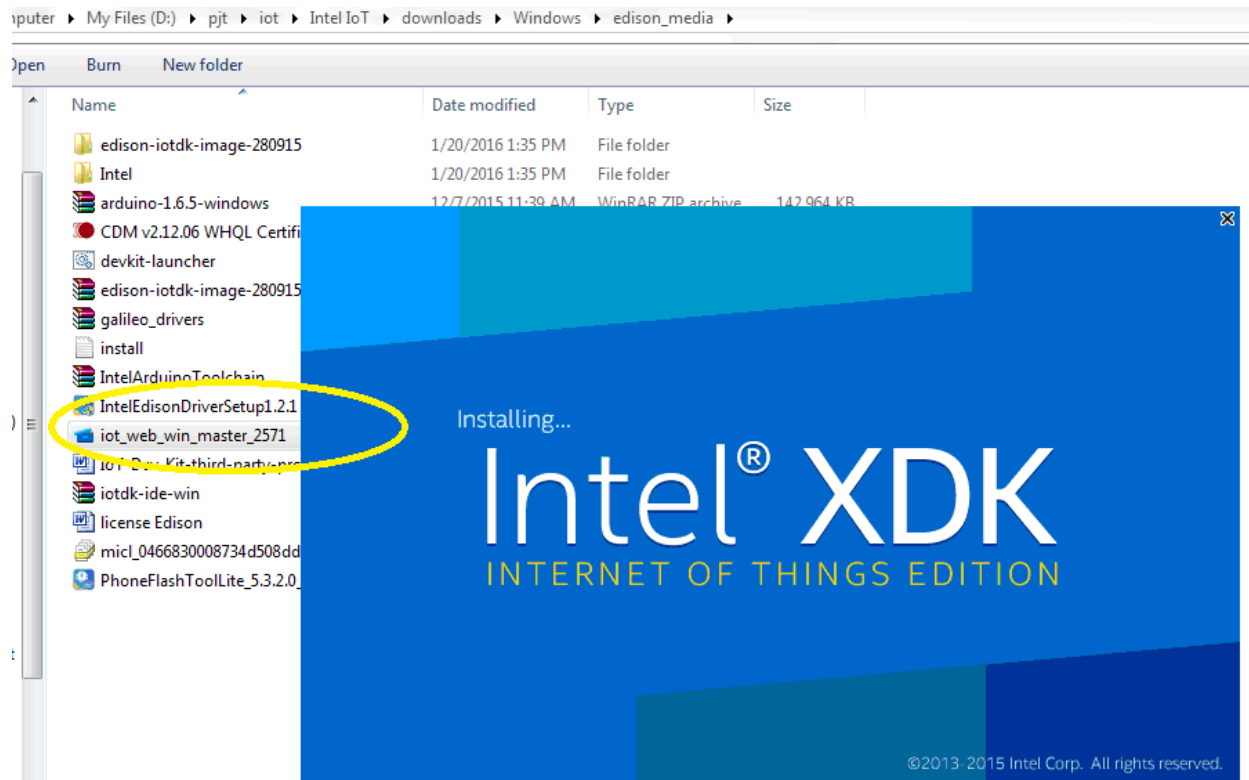**Intel Edison- Bluemix IoT Integration :**

(Windows)

Step 1: Installing Intel board drivers and development console on your workstation

- Installi the required SB/netowork interface drivers (files will be provided by the event admin)
    a. IntelEdisonDriverSetup1.2.1.exe (drivers)
   b. iot_web_win_master_2571.exe (XDK IDE)

Note: reboot the system post the installation

### Step2: Install the Bluemix recipe (agent) for Edison on your workstation:

- Download the recipe from the following URL.
  https://github.com/chipgarner/EdisonBluemixNode/tree/quickstart
- . Unzip it to a folder on your local filesystem

Step 3: Create a project on the Intel XDK console:

- Open Intel XDK IoT Edition.
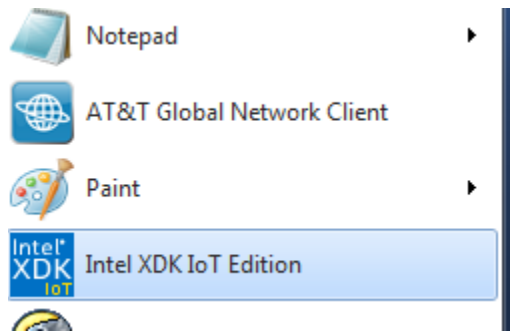
- Select PROJECTS and OPEN AN INTEL XDK PROJECT. Navigate to the folder you unzipped the project in and select the .xdk file. Move on to the DEVELOP tab to view the source code of the Bluemix recipe for Edison board
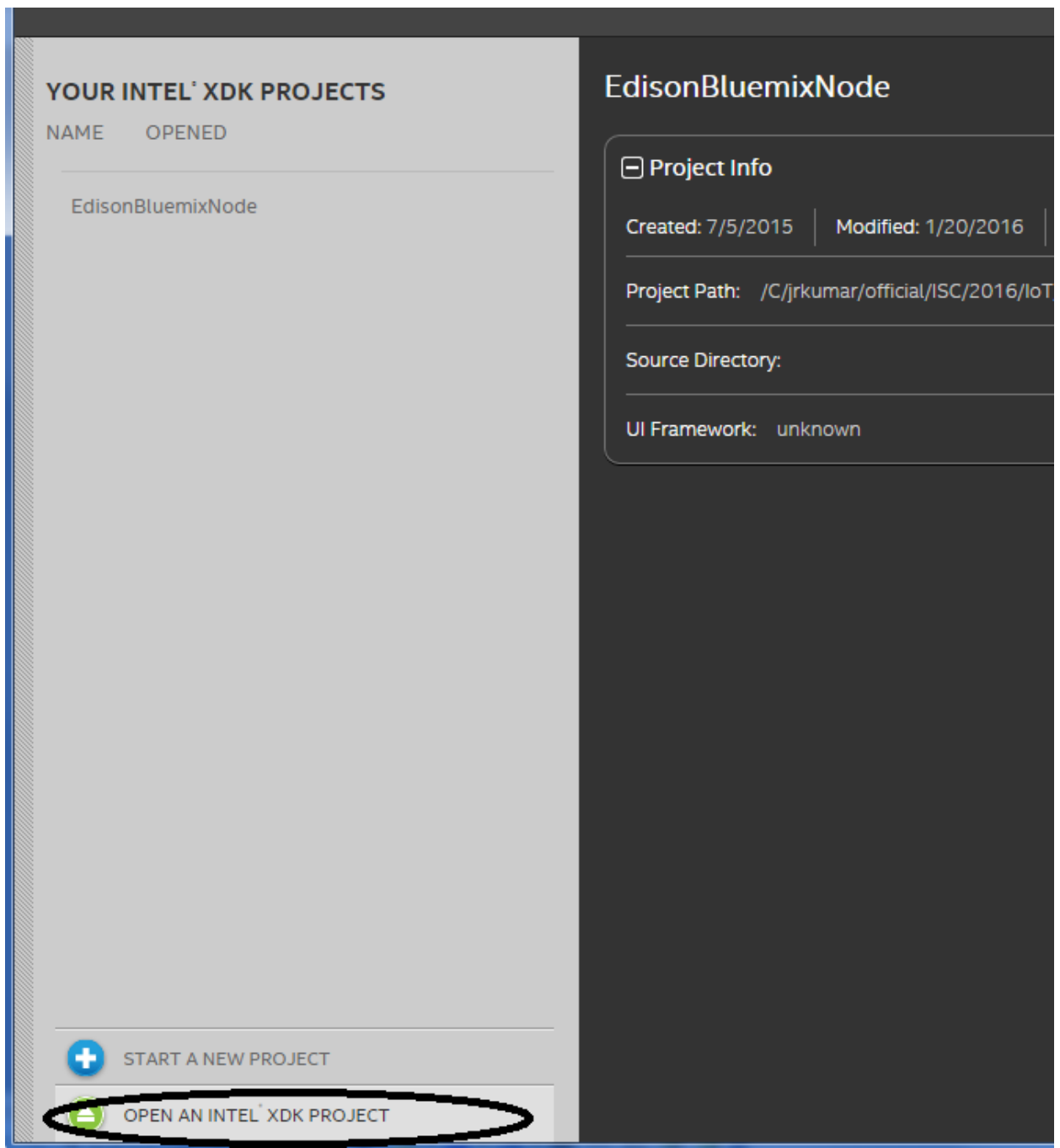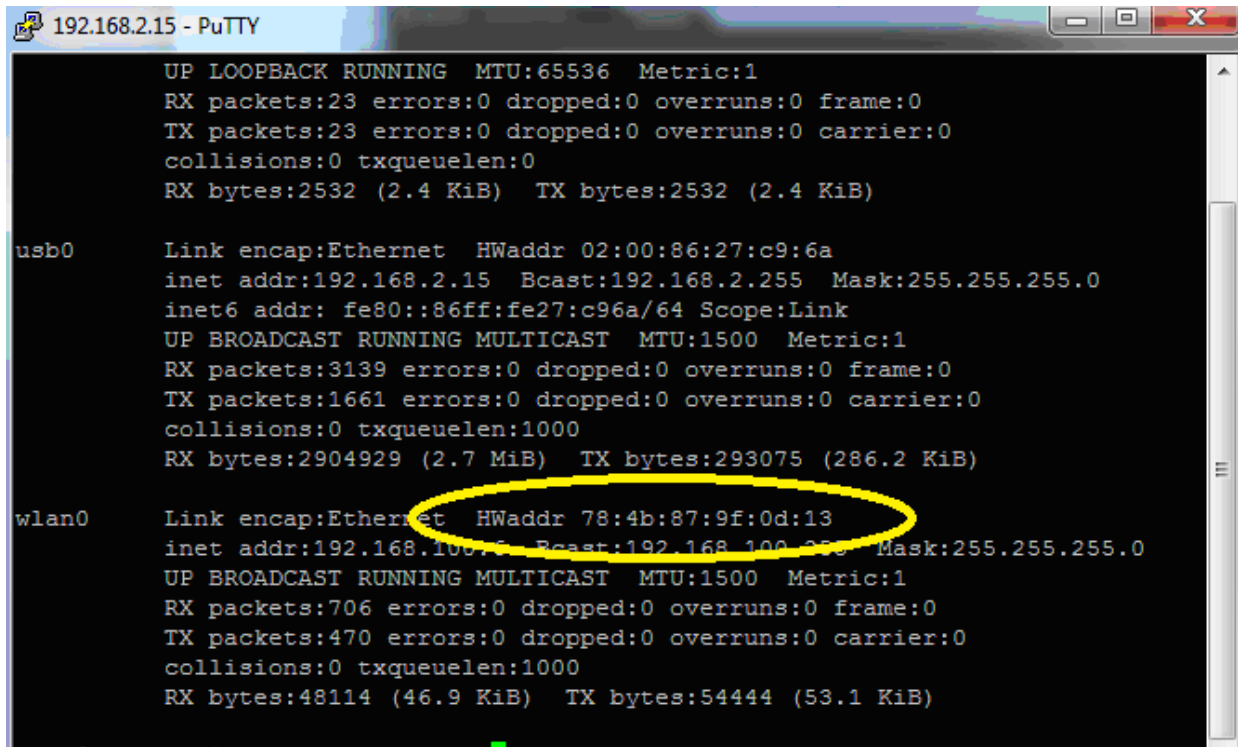
- Note: The mac address needs to be modified in the file main.js @ line 11 , which is described in the next step

Step 4: Connect to the Intel Edison board using PUTTY to get the MAC address

- Get the IP address of the Edison device from the event admin and connect to the device use root as user id. No password required

a. NOTE: alternate way of getting the IP address is explained in the appendix below, page 12 of 14

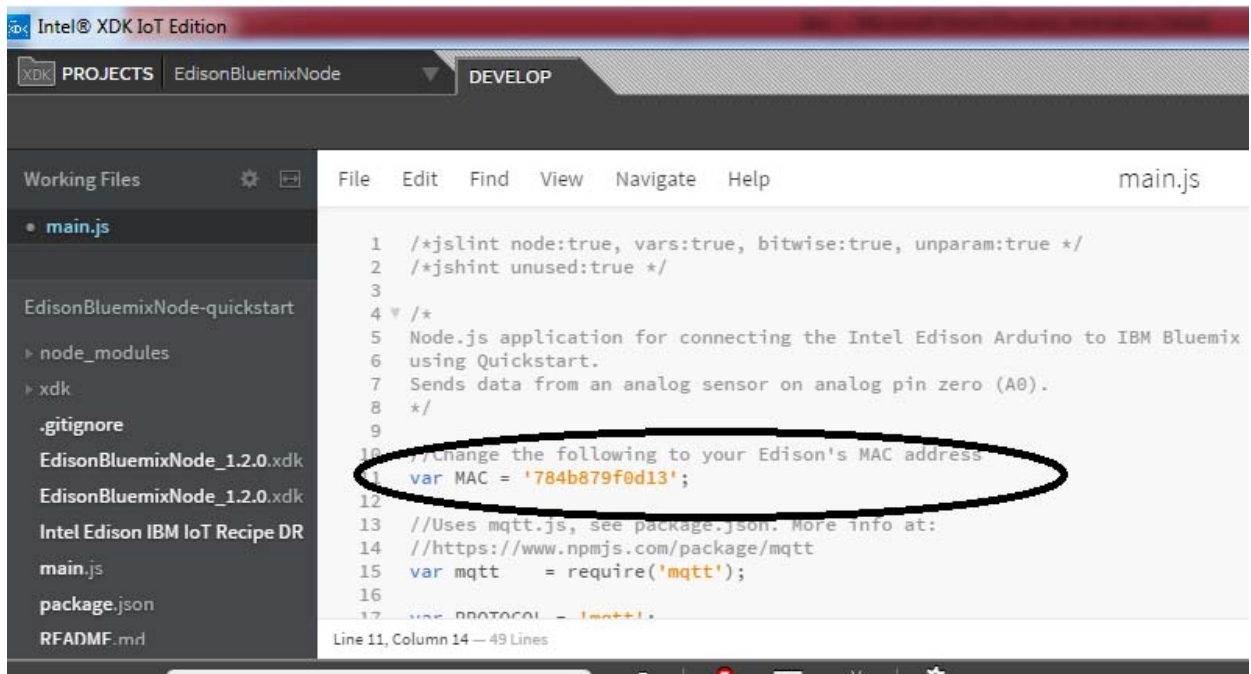- Run the command "ifconfig" to get the MAC address. In this case, 78:4b:87:9f:0d:13

- Note down the MAC address and modify the main.js code in the Intel XDK console
    a. Note: Remove the colon inbetween the address: "784b879f0d13"

Step 5: Upload the Bluemix recipe to the Edison board

- Go back to the XDK console and Select a device for Manual connection
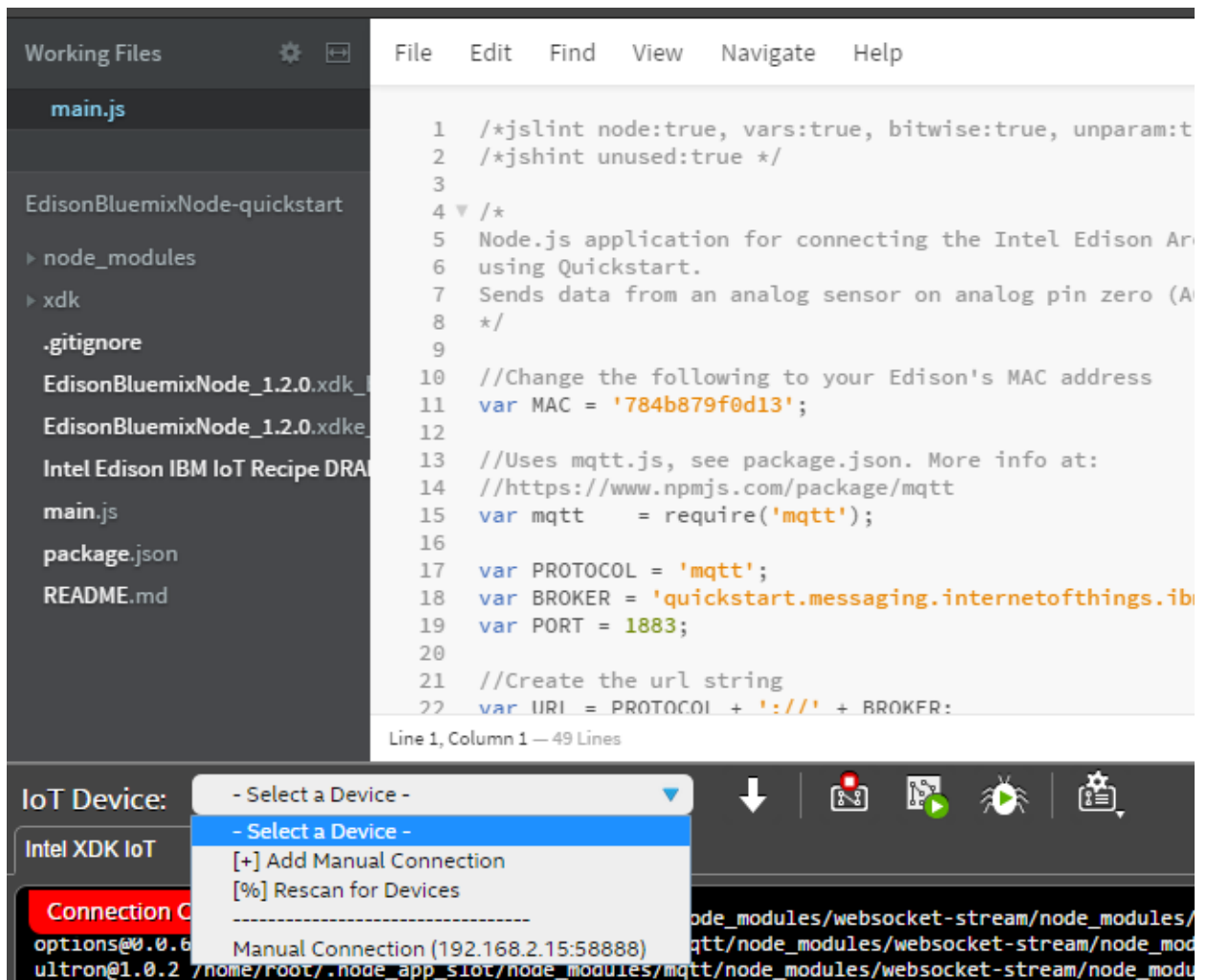
- Provide the IP address and use "root" as the user id . Leave the password filed blank

- Proceed to connect to the device

- Post the connection move the Bluemix recipe to the Edison Board by selecting the down arrow
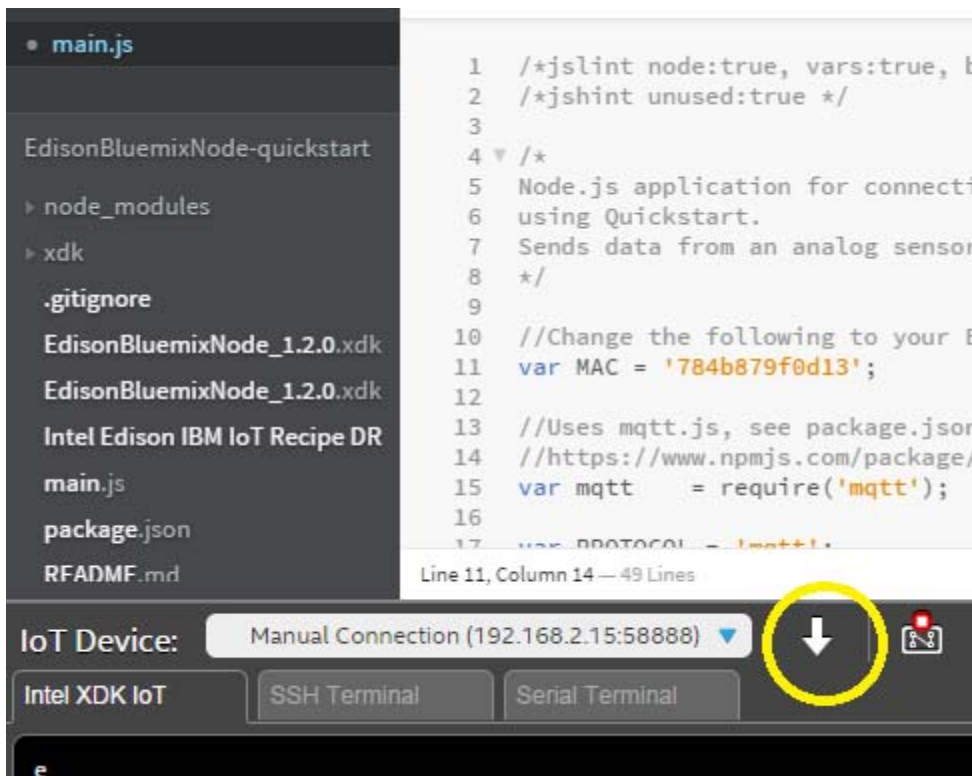
- At this stage the recipe is been uploaded and built at the board. Notice the "Build complete" and upload complete" message in the console

Step 6: Good to start publishing the data …

- Start the agent by pressing the Green Button. At this stage, if the sensor is connected(refer to Step-7), to the board, you should see that the data starts flowing out of the Edison board to the Bluemix IOT server
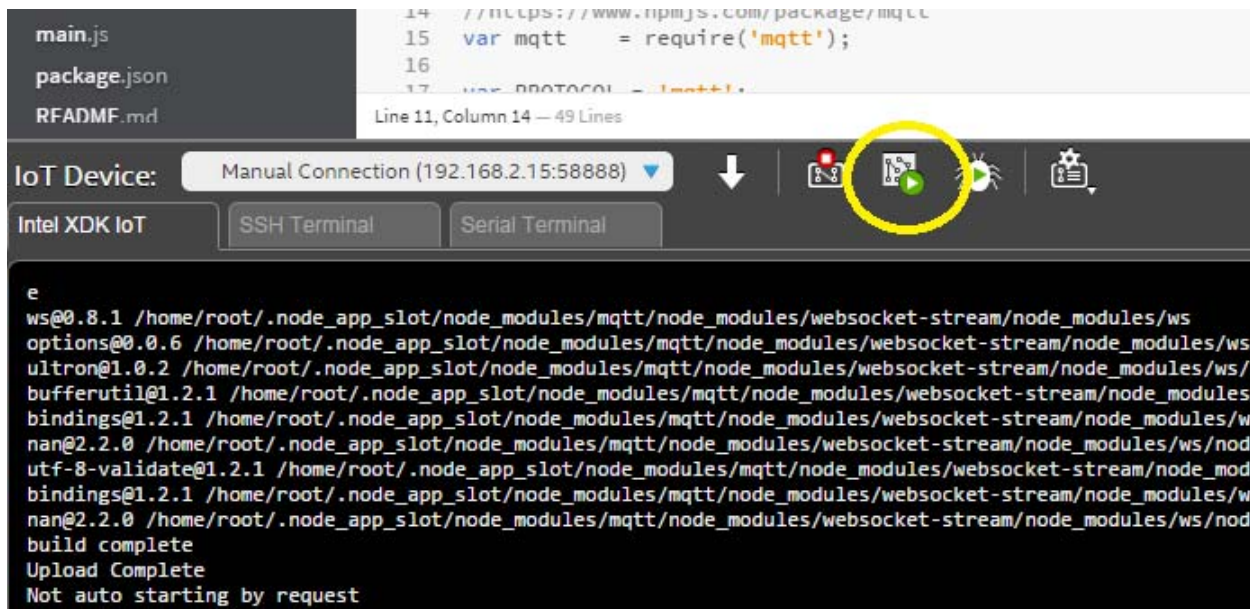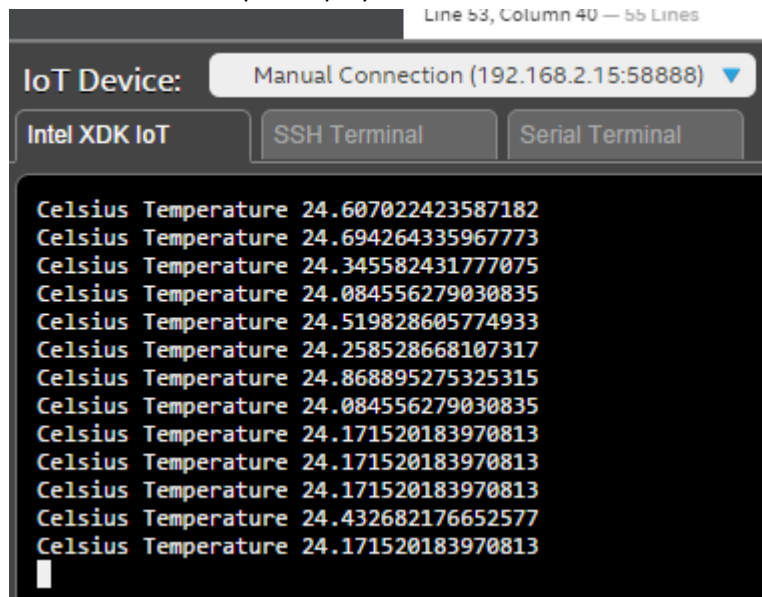
Step 7 Connecting sensors with Edison Board

- Connect the Temperature sensor with the "A0" slot of the Aurdino shield of the Edison Board

- Do the required modification to the recipe (main.js), if any

  o MAC address (as done in step4)

  o Based on the sensor, reading the data from the sensor

Note: By default without any modification the agent will publish the temperature data in volts

- Upload it to the device from XDK as shown in Step 5

- Run it , as shown in Step 6

- You will see the output displayed in the XDK console

```
Line 53, Column 40 — 55 Lines

IoT Device:    Manual Connection (192.168.2.15:58888) ▼

Intel XDK IoT    SSH Terminal    Serial Terminal

Celsius Temperature 24.607022423587182
Celsius Temperature 24.6942643359677773
Celsius Temperature 24.345582431777075
Celsius Temperature 24.084556279030835
Celsius Temperature 24.519828605774933
Celsius Temperature 24.258528668107317
Celsius Temperature 24.868895275325315
Celsius Temperature 24.084556279030835
Celsius Temperature 24.171520183970813
Celsius Temperature 24.171520183970813
Celsius Temperature 24.171520183970813
Celsius Temperature 24.432682176652577
Celsius Temperature 24.171520183970813
```

- Visualize the same data in the Bluemix IOT server using the link,
  https://quickstart.internetofthings.ibmcloud.com

- Provide the MAC address, as mentioned in the main.js (step 4) and see the data been visualized for you
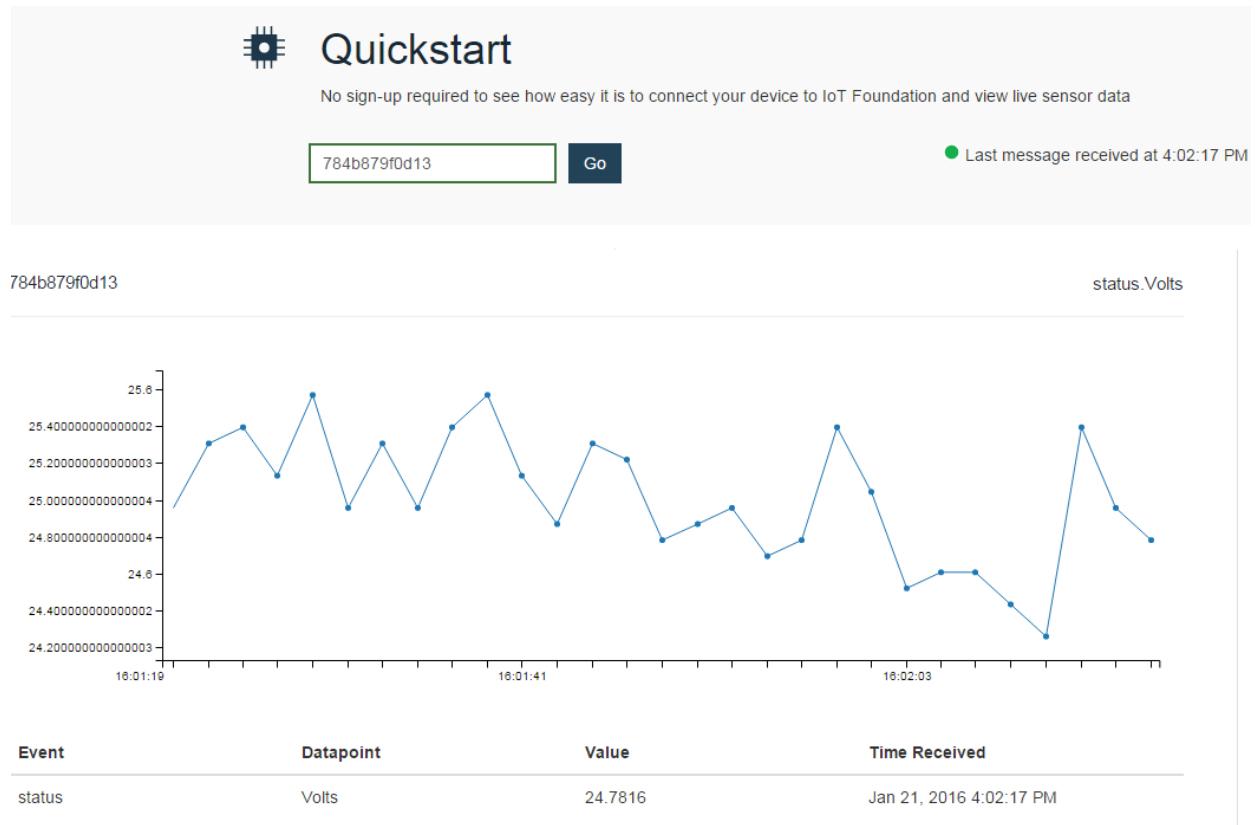
Prepared by IBM EcoD India Team @Feb 2016

Contact Rajesh K Jeyapaul, jrkumar@in.ibm.com for further details

Proceed to Next Lab : Bluemix integration – moving data to Bluemix cloud for further exploration
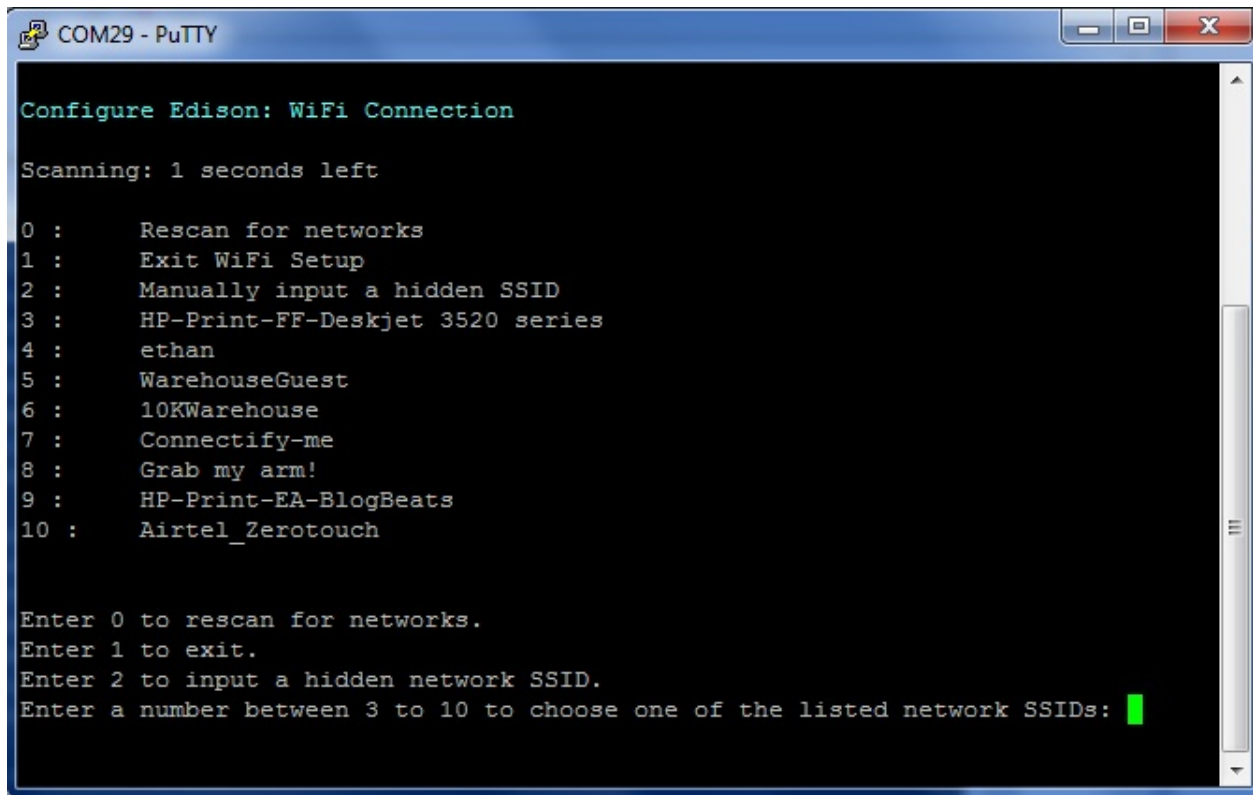
Appendix:

How to connect to Intel Edison board using com port to scan for the ip address:

1.connect the Intel Edison board to the micro usb available near to the toggle switch in the board

2.Power the intel board

3.Go to desktop device manager to identify the COM port assigned
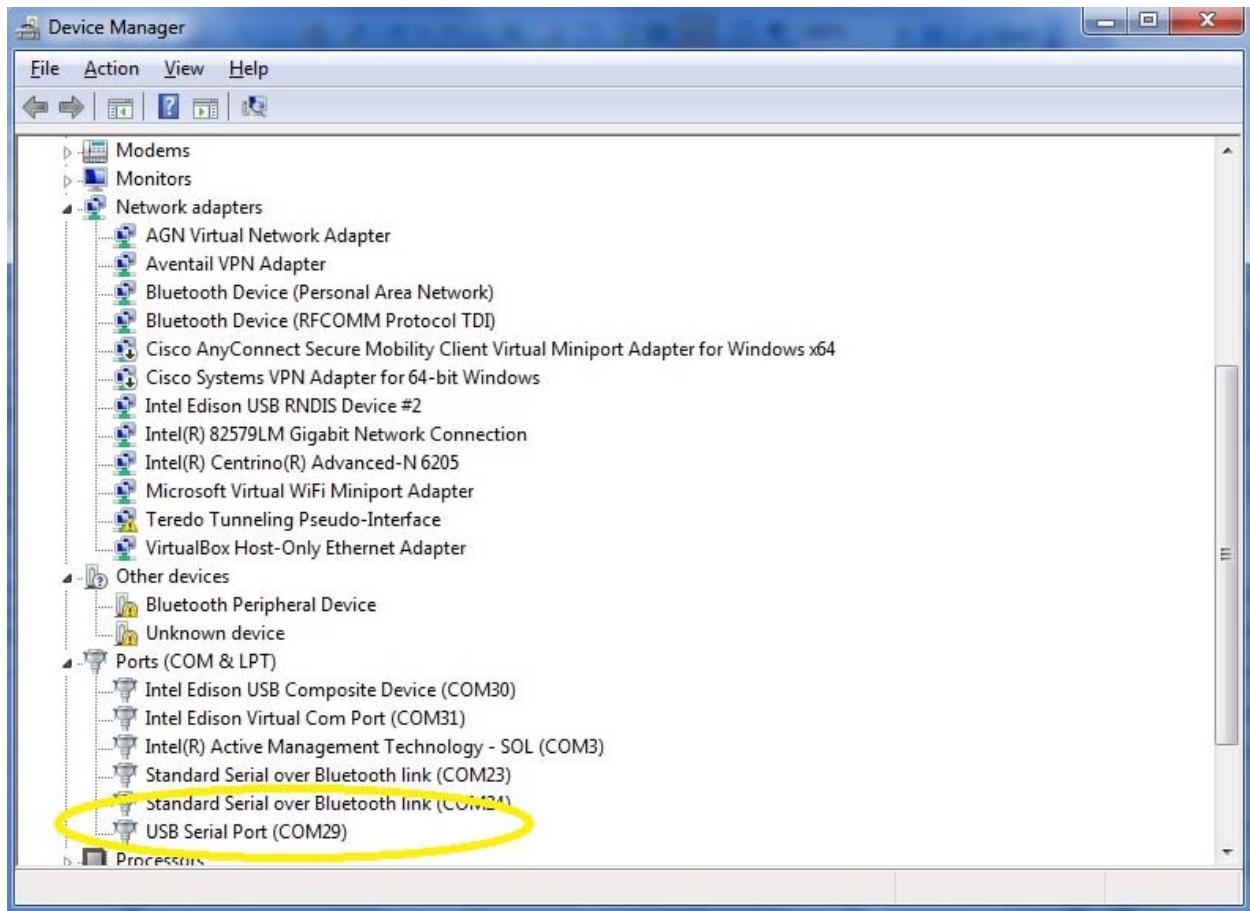
4.connect to the com port using the baud rate 115200 using putty. Login as root. No password required

5. run the command "configure_edison –-wifi " to scan for the wifi available and procced to select the available wifi

```
COM29 - PuTTY

Configure Edison: WiFi Connection

Scanning: 1 seconds left

0 :      Rescan for networks
1 :      Exit WiFi Setup
2 :      Manually input a hidden SSID
3 :      HP-Print-FF-Deskjet 3520 series
4 :      ethan
5 :      WarehouseGuest
6 :      10KWarehouse
7 :      Connectify-me
8 :      Grab my arm!
9 :      HP-Print-EA-BlogBeats
10 :     Airtel_Zerotouch


Enter 0 to rescan for networks.
Enter 1 to exit.
Enter 2 to input a hidden network SSID.
Enter a number between 3 to 10 to choose one of the listed network SSIDs:
```

6. Do an ifconfig command to get the ipaddress assigned

7.Enable ssh by providing the ssh password using the command

"configure_edison –password"

8.All set to connect to the device using the ip assigned

```
4 :      ethan
5 :      WarehouseGuest
6 :      10KWarehouse
7 :      Connectify-me
8 :      Grab my arm!
9 :      HP-Print-EA-BlogBeats
10 :     Airtel_Zerotouch


Enter 0 to rescan for networks.
Enter 1 to exit.
Enter 2 to input a hidden network SSID.
Enter a number between 3 to 10 to choose one of the listed network SSIDs: 6
Is 10KWarehouse correct? [Y or N]: Y
Password must be between 8 and 63 characters.
What is the network password?: ****************
Initiating connection to 10KWarehouse. Please wait...
Attempting to enable network access, please check 'wpa_cli status' after a minut
e to confirm.
Done. Please connect your laptop or PC to the same network as this device and go
 to http://192.168.1.64 or http://edison.local in your browser.
Warning: SSH is not yet enabled on the wireless interface. To enable SSH access
to this device via wireless run configure_edison --password first.
root@edison:~#
```