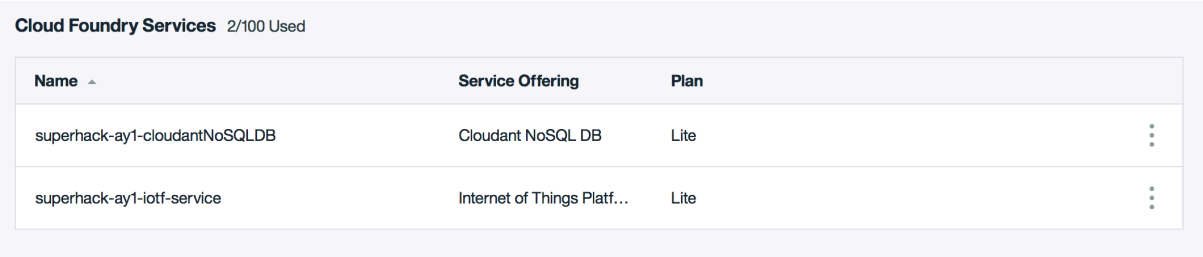
Prerequisites:
1. Complete IBM Cloud prerequisites:
https://github.com/SuperhackMelbourne/superhack2017/blob/master/bluemix/README.md

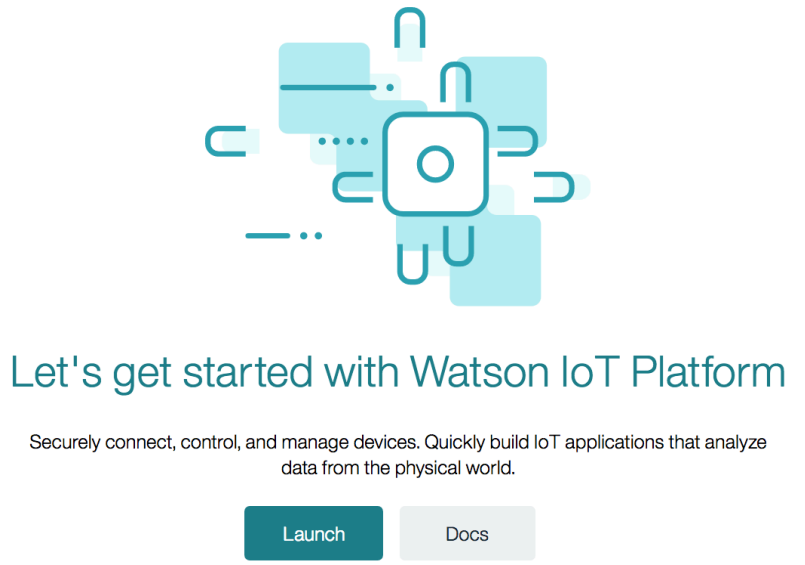
Steps:

1. Open your Bluemix dashboard (https://console.bluemix.net/dashboard)

2. Click on the service with the “Internet of Things Platform” service offering



3. Click “Launch” on the next page

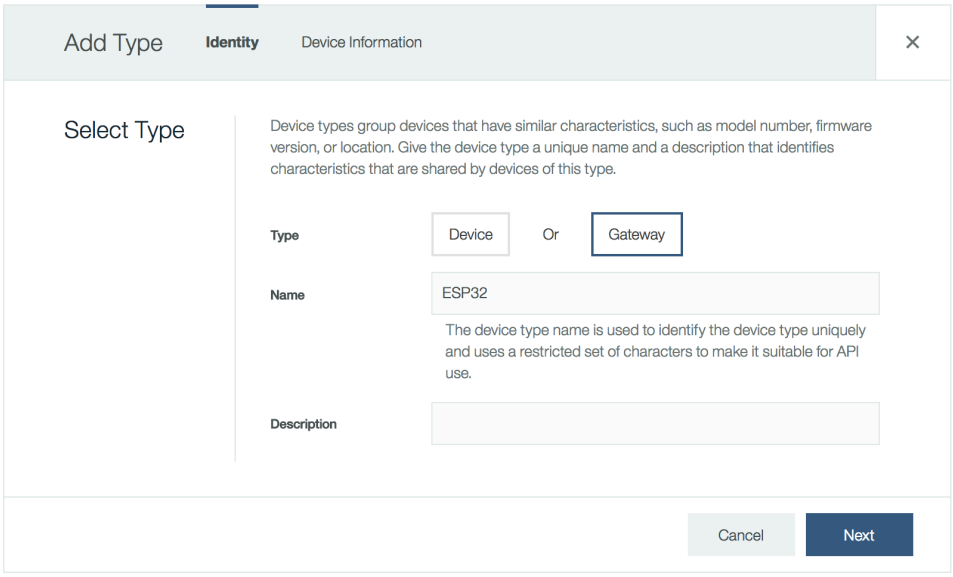


4. Click on “Devices” in the left sidebar

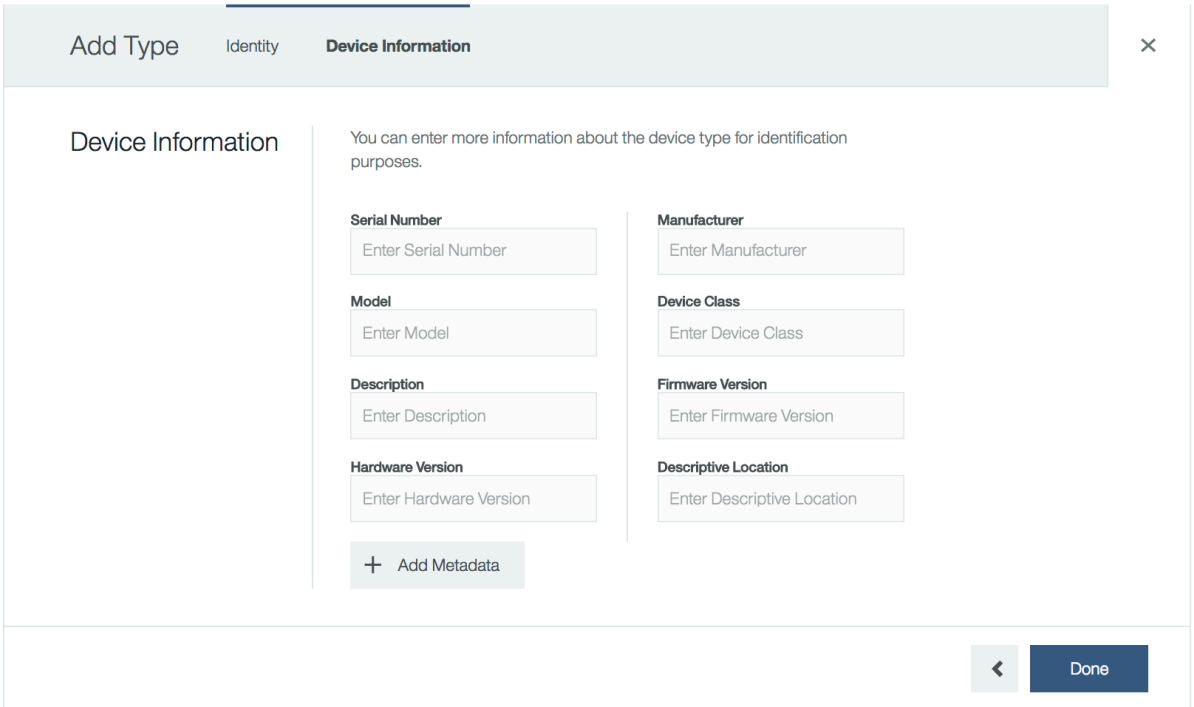
5. Click on the “Device Types” tab

6. Click on “+ Add Device Type” near the top right

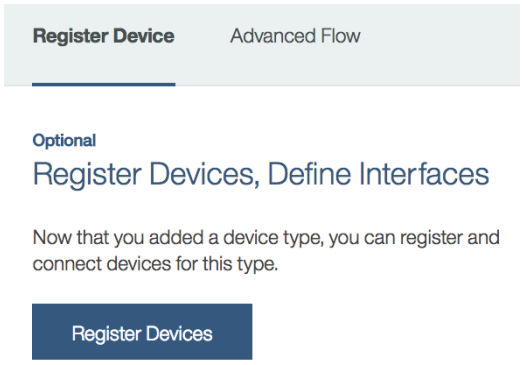
7. Select “Gateway” for the type, enter ESP32 for the name and click “Next”



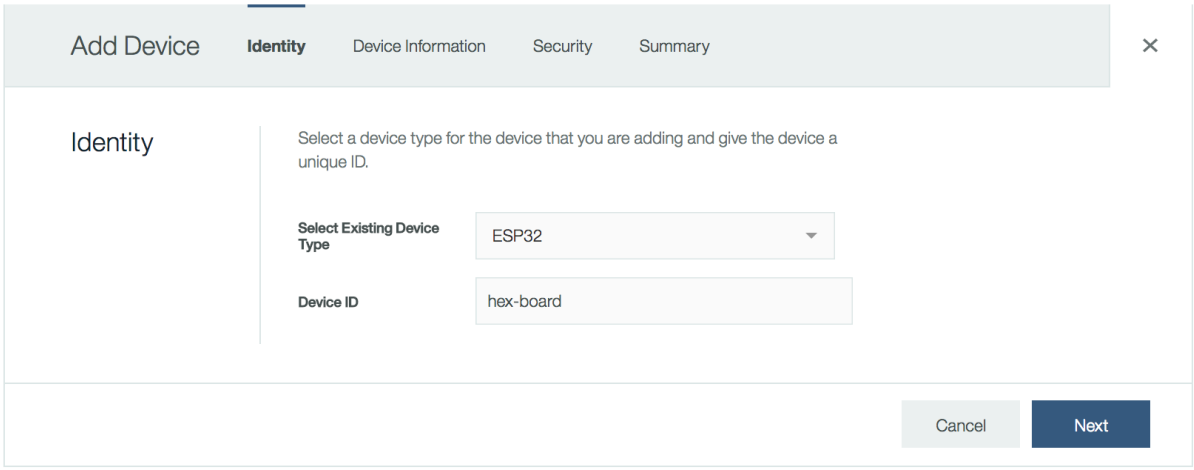
8. All the fields are optional, click “Done”



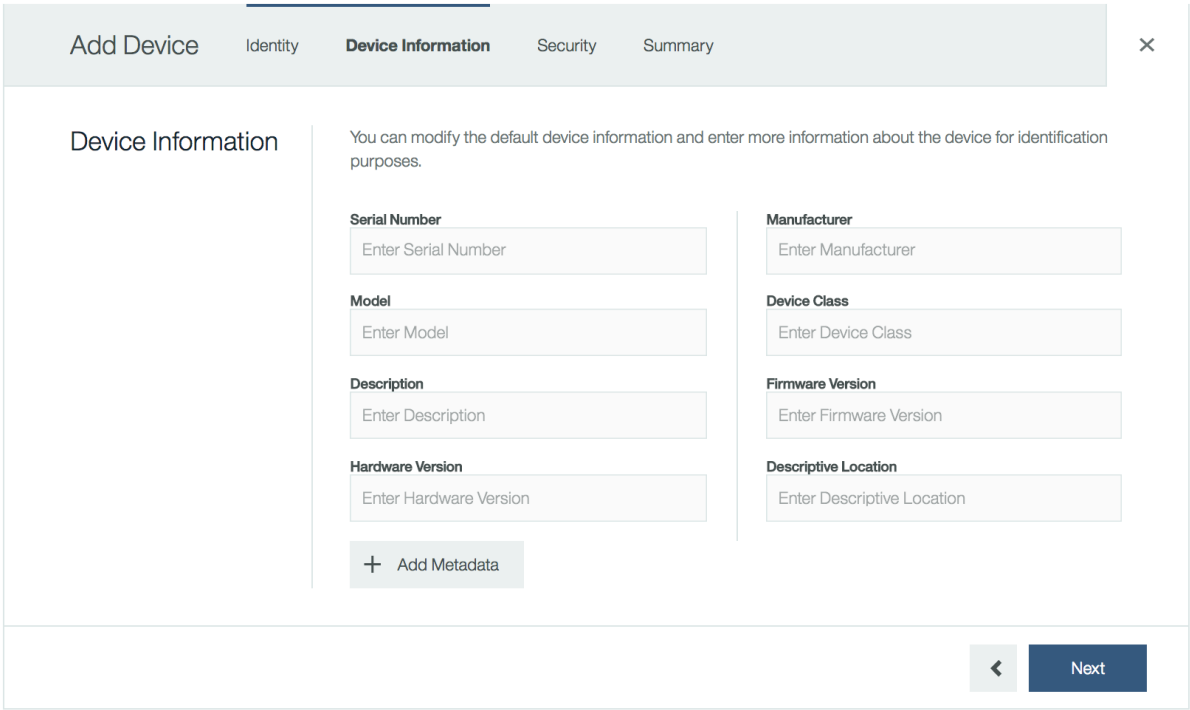
9. Click “Register Devices”



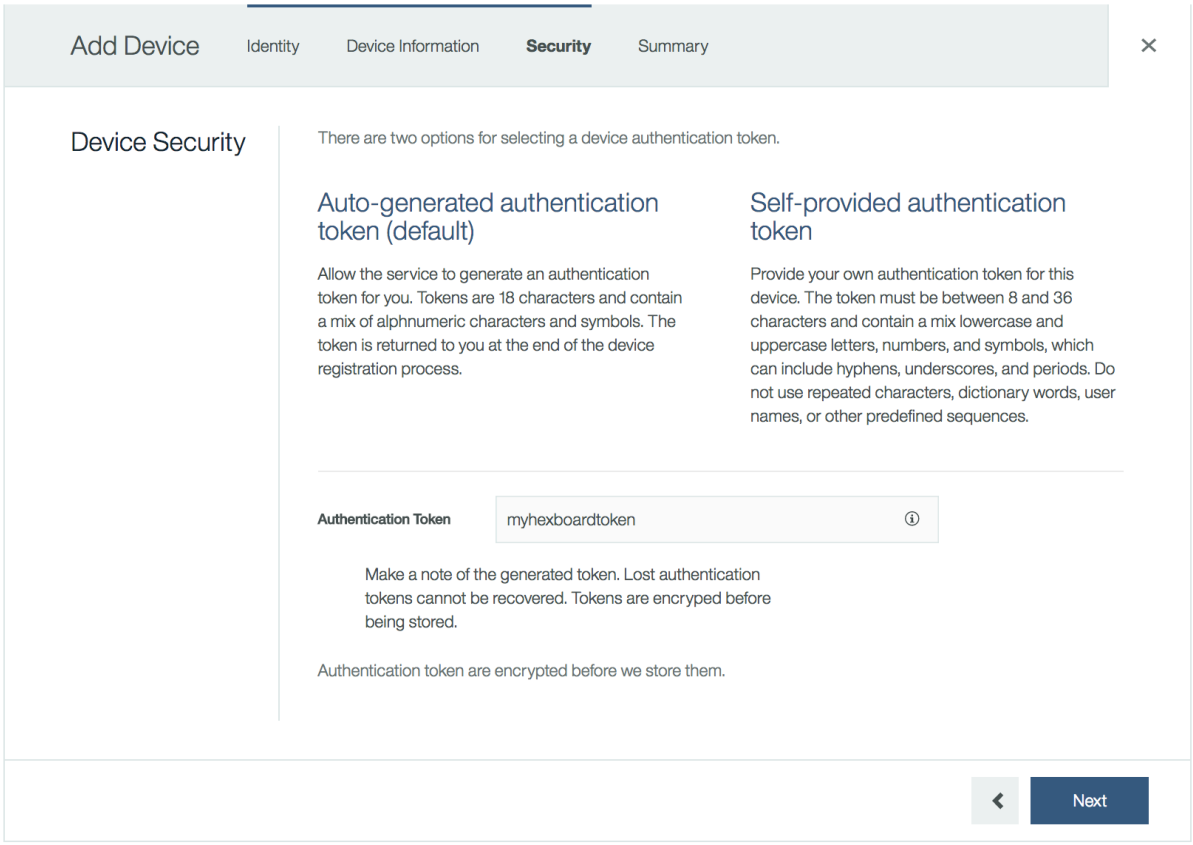
10. Check the Device Type is ESP32, enter Device ID as hex-board (or any name your like) and click “Next”



11. All fields are optional here, click “Next”

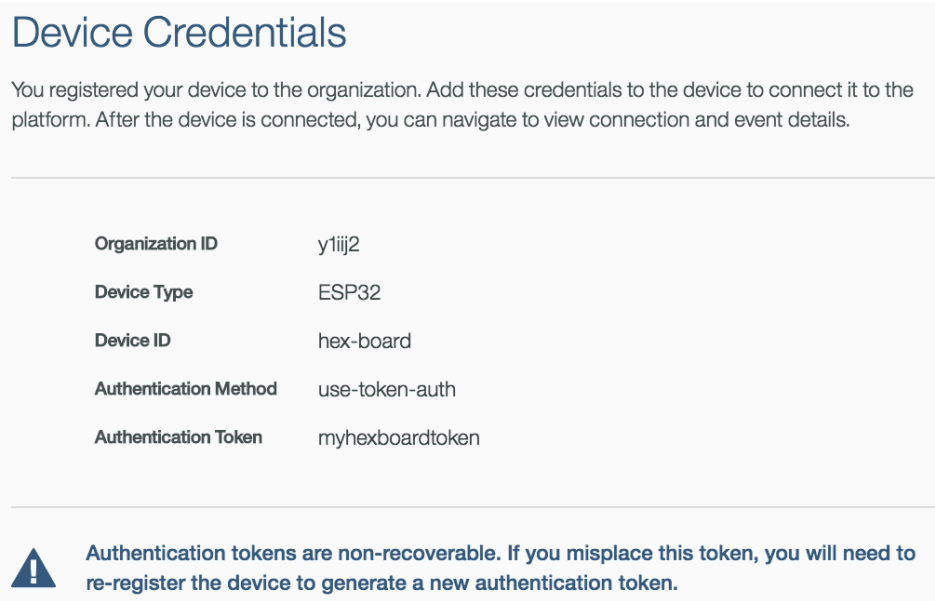


12. Enter a token (don't lose this!) between 8 and 36 characters and click "Next"

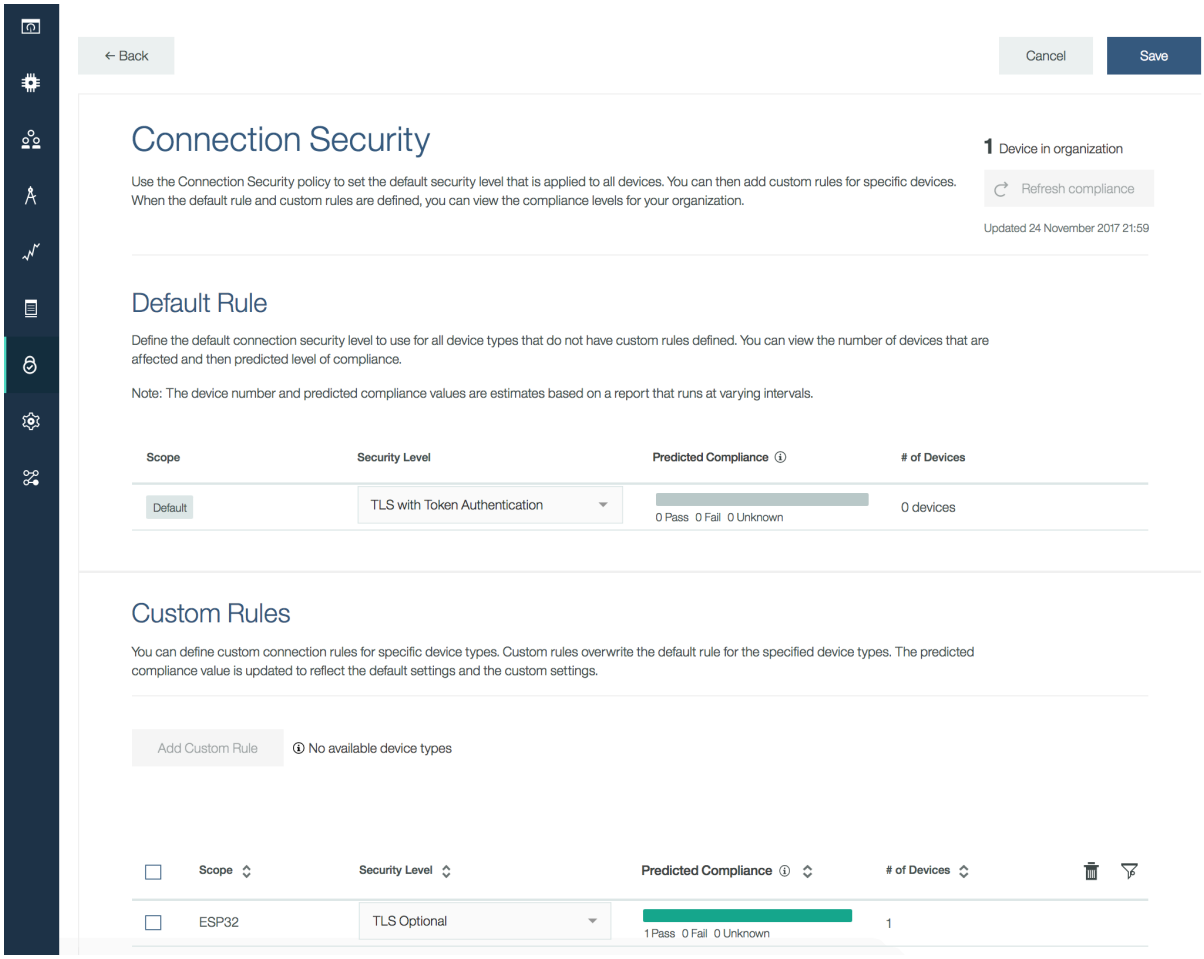


13. Click "Done"

14. Take note of your device credentials



14.1 Click on Security on the left. Add a new custom rule. Set the scope to ESP32 and security level to TLS optional. Click "Refresh compliance" and then save



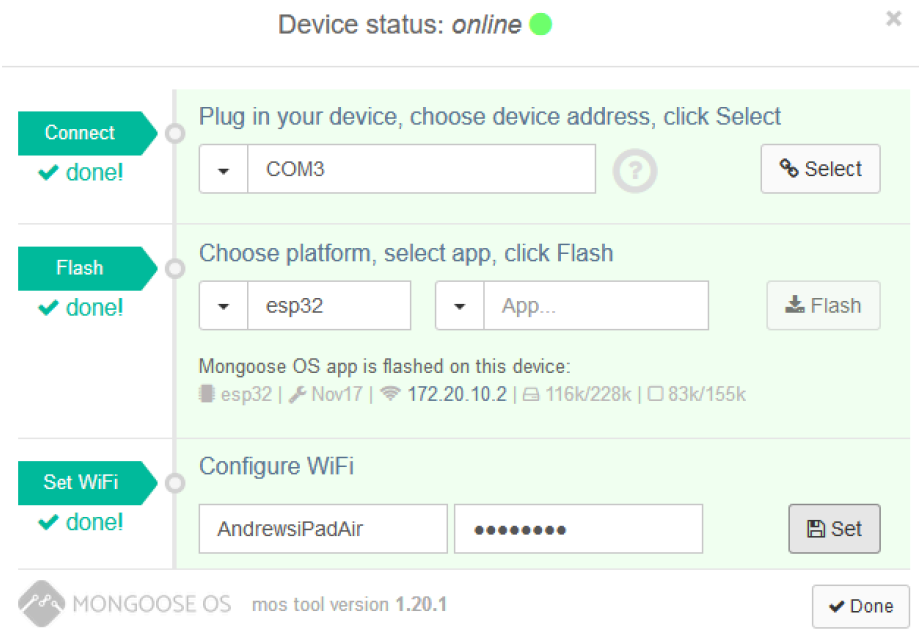
15. Download and install Mongoose OS from https://mongoose-os.com/software.html

16. Download and install CP210x USB to UART Bridge VCP Drivers from https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

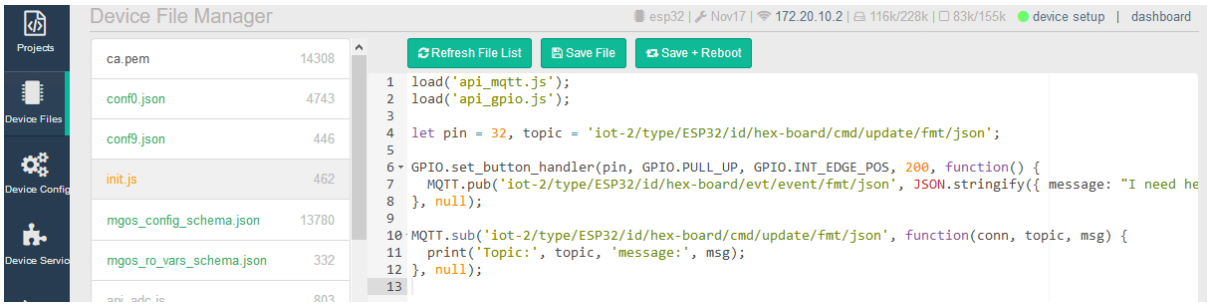
17. Connect battery to hex board

18. Connect hex board to your computer using supplied USB cable

19. Run Mongoose OS, select COM3 in the drop-down and click “Select”. You should see Flash and Set WiFI automatically done.



20. Click on “Device Files” on the left and “init.js” under the Device File Manager. Ensure that your code looks like the following screenshot. If so, proceed to Step 21. If not, copy and paste the code below into your screen and click “Save + Reboot”. You can replace hex-board with your own device ID if you have set your own one

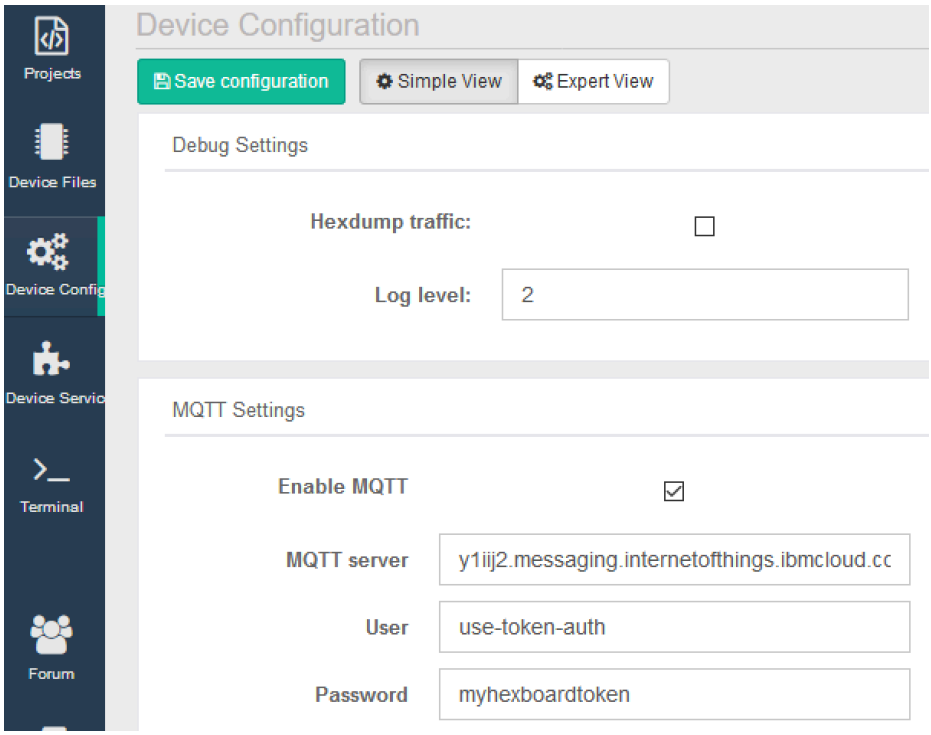


Code:

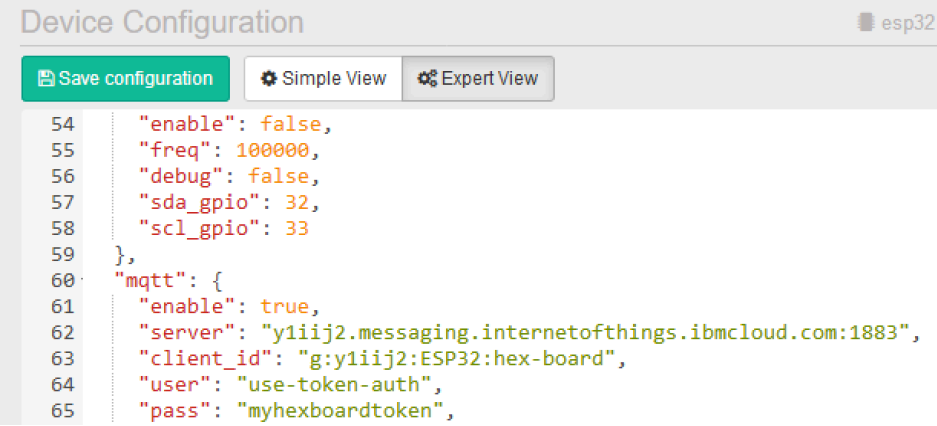
```
load('api_mqtt.js');

load('api_gpio.js');



let pin = 32, topic = 'iot-2/type/ESP32/id/hex-board/cmd/update/fmt/json';



GPIO.set_button_handler(pin, GPIO.PULL_UP, GPIO.INT_EDGE_POS, 200, function() {

  MQTT.pub('iot-2/type/ESP32/id/hex-board/evt/event/fmt/json', JSON.stringify({ message: "I need help!"}));

}, null);
```

```
MQTT.sub('iot-2/type/ESP32/id/hex-board/cmd/update/fmt/json', function(conn, topic, msg) {

  print('Topic:', topic, 'message:', msg);

}, null);
```

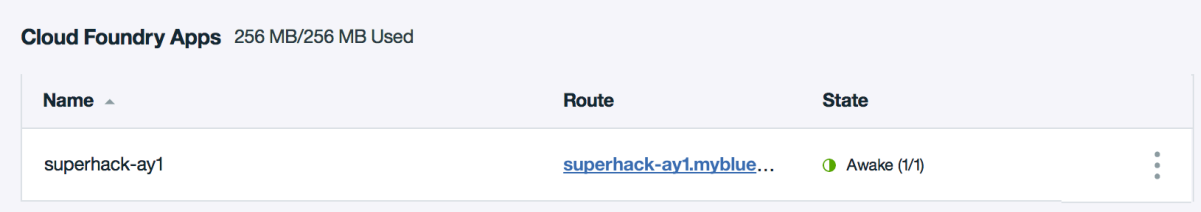
21. Click on “Device Config” on the left and set the MQTT server to xxxxxx.messaging.internetofthings.ibmcloud.com:1883, where xxxxxx is your Organization ID from Step 14. Ensure User is use-token-auth and set the password to your token from Step 12. Click “Save configuration”



22. Click on “Expert View” and at line 63, change client ID to g:xxxxxx:ESP32:yyyyyy where xxxxxx is your Organization ID from Step 14 and yyyyyy is your device ID from Step 10. Click “Save configuration”

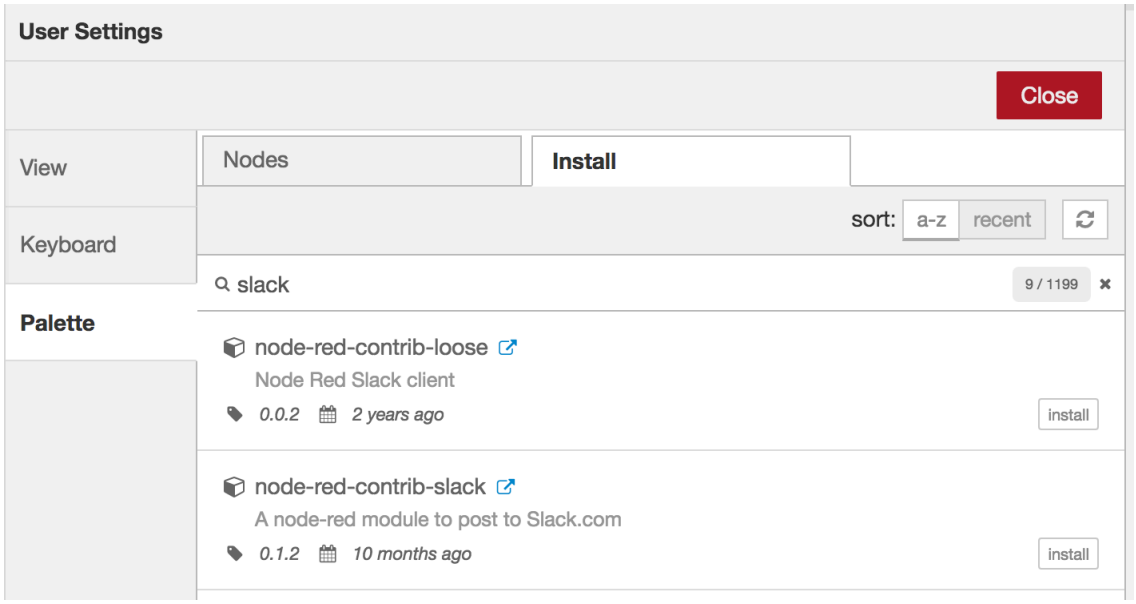


23. Open your Bluemix dashboard (https://console.bluemix.net/dashboard) and click on the link of your Cloud Foundry App



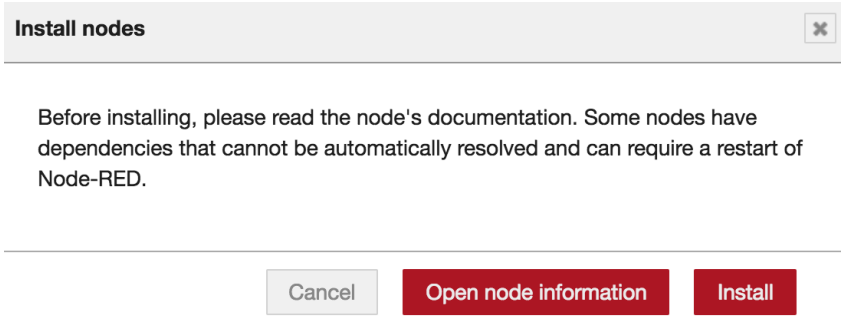
24. Click the “hamburger” icon on the top right and click “Manage palette”

25. Click the “Install” tab and search for slack



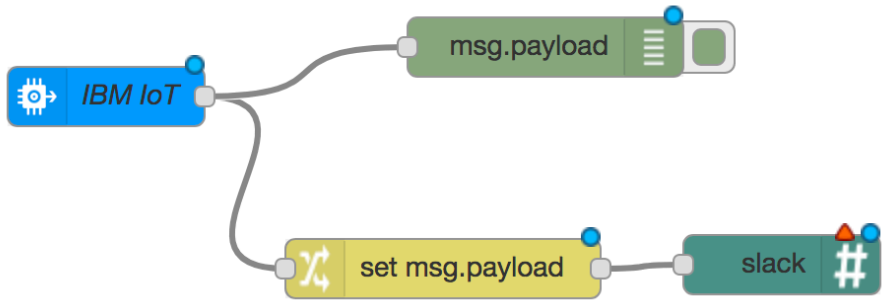
26. Install node-red-contrib-slack by clicking “Install”

27. Click “Install”

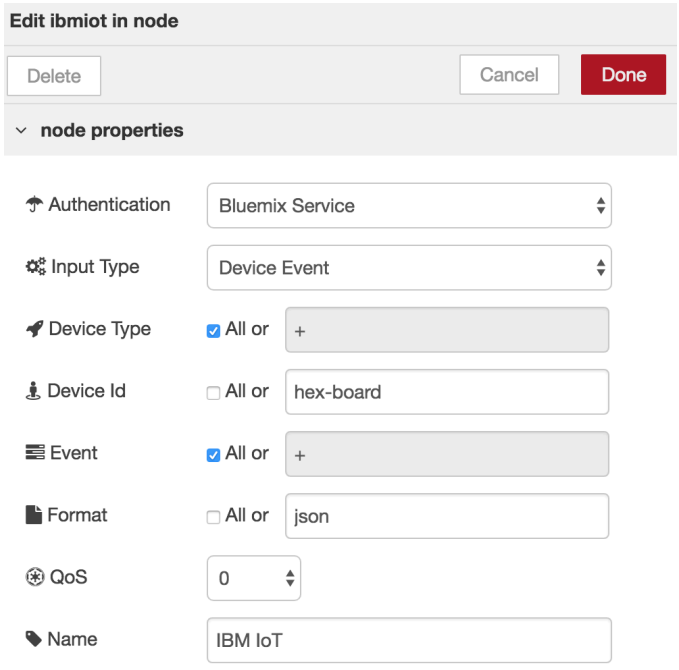


28. The installation will fail for the first time. Click “Install” again and it will complete successfully. After the installation completes, click “Close” and click “+” to create a new flow

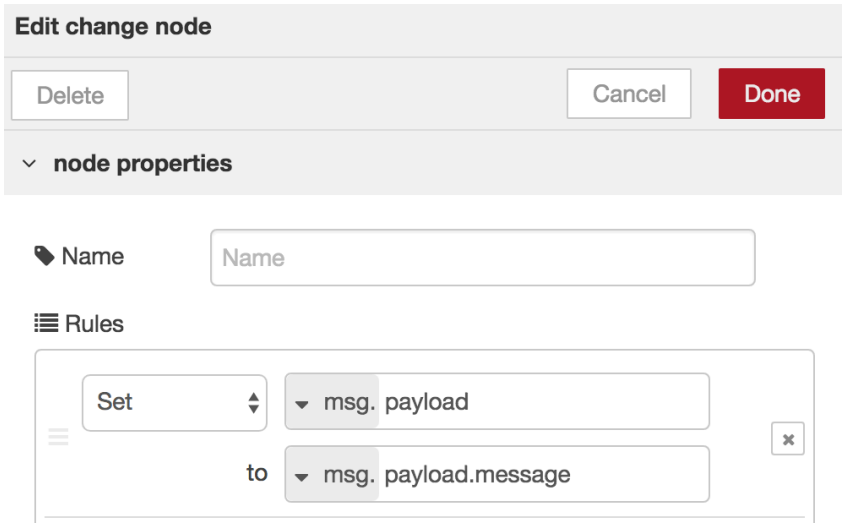
29. From the left, drag and drop the ibmiot, change, debug and slack nodes into the canvas and connect them together as per diagram below



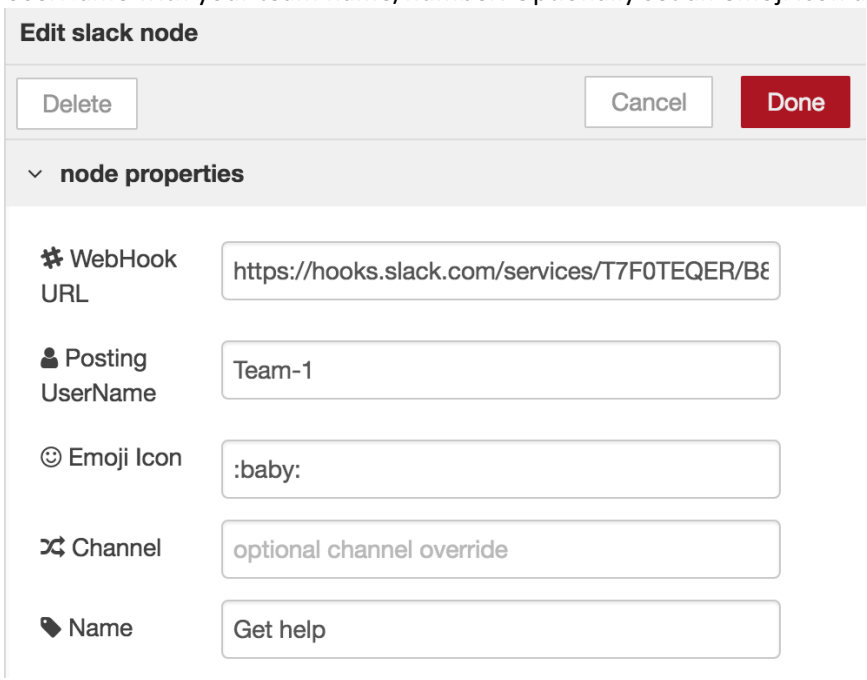
30. Double-click the IBM IoT node, change Authentication to Bluemix Service and enter your device ID



31. Double-click the change node and modify the “to” field to msg.payload.message



32. Double-click the slack node, fill in the WebHook URL with https://hooks.slack.com/services/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, the UserName with your team name/number. Optionally set an emoji icon and name.



33. Click “Deploy”

34. Join the #help channel in the SuperHack2017.slack.com workspace

35. Press and release the button “USER BTN 1” on the hex board. You should see a message in the Slack channel requesting for help.

36. Congratulations, you have finished the first tutorial!