Cloud integration Azure IOT

IoT Communication and Infrastructure

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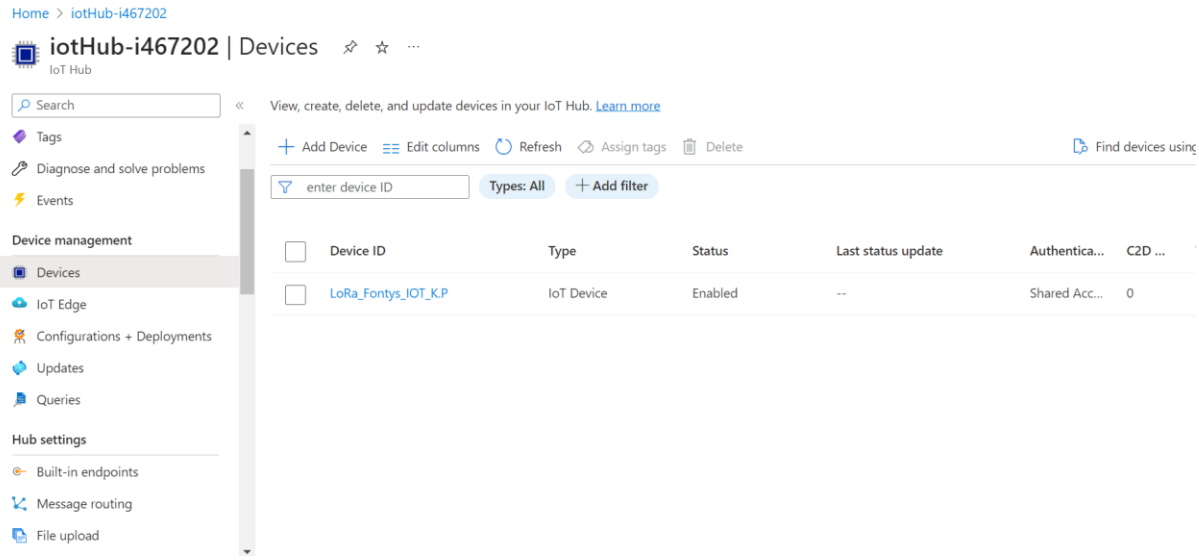
Introduction

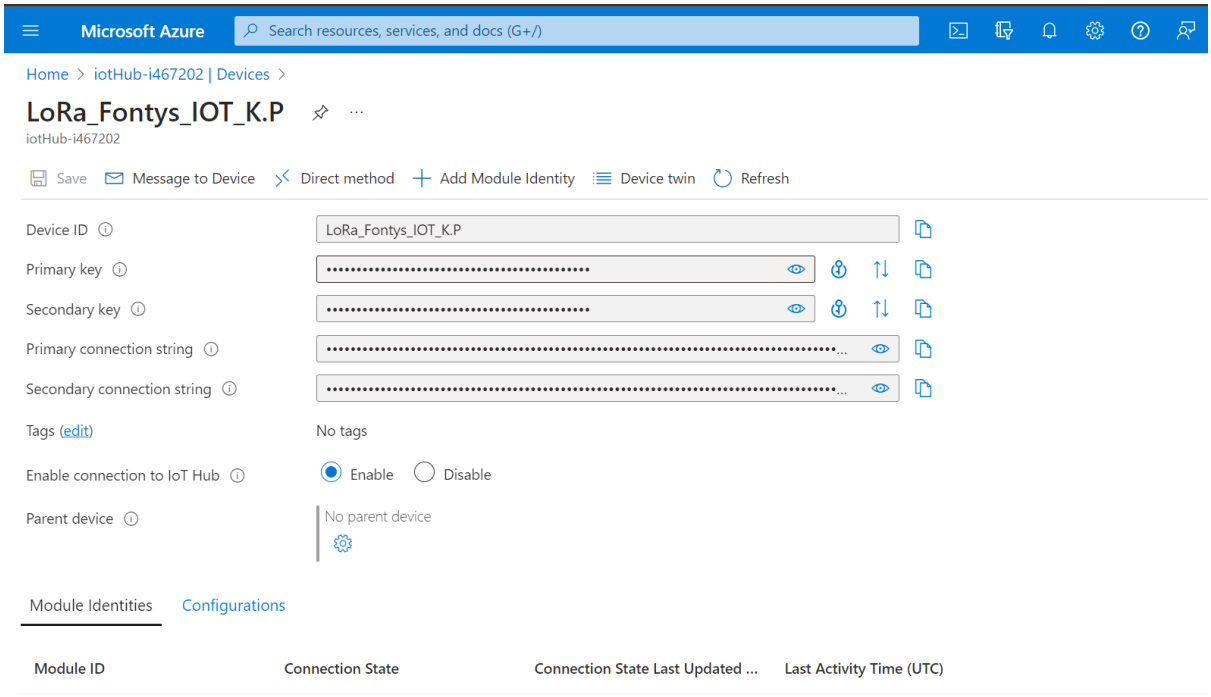
In this assignment we are going to explore how to use Azure (IOTHub). We are going to follow the updated version of the assignment document to complete this assignment by completing all the steps that will be described in the document. We will also explore how to use dashboards in Azure, and the node-red will also be connected with it. All the steps taken while completing this assignment will explain further.

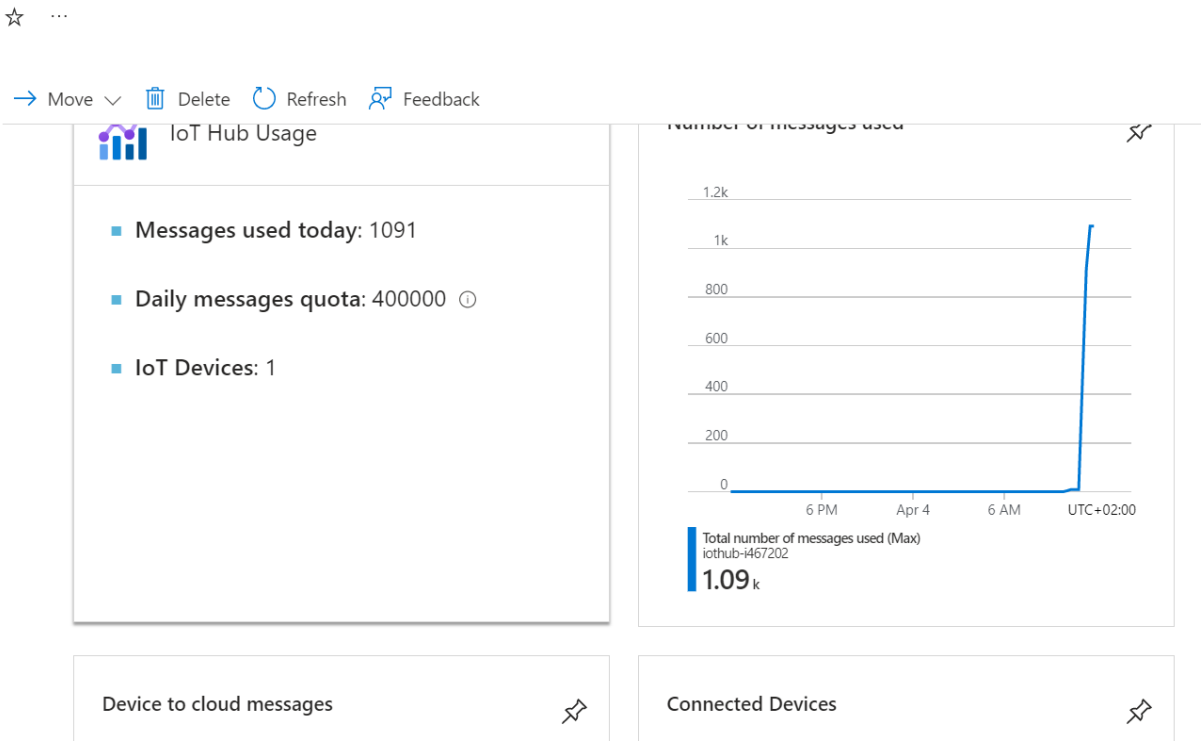
Procedure

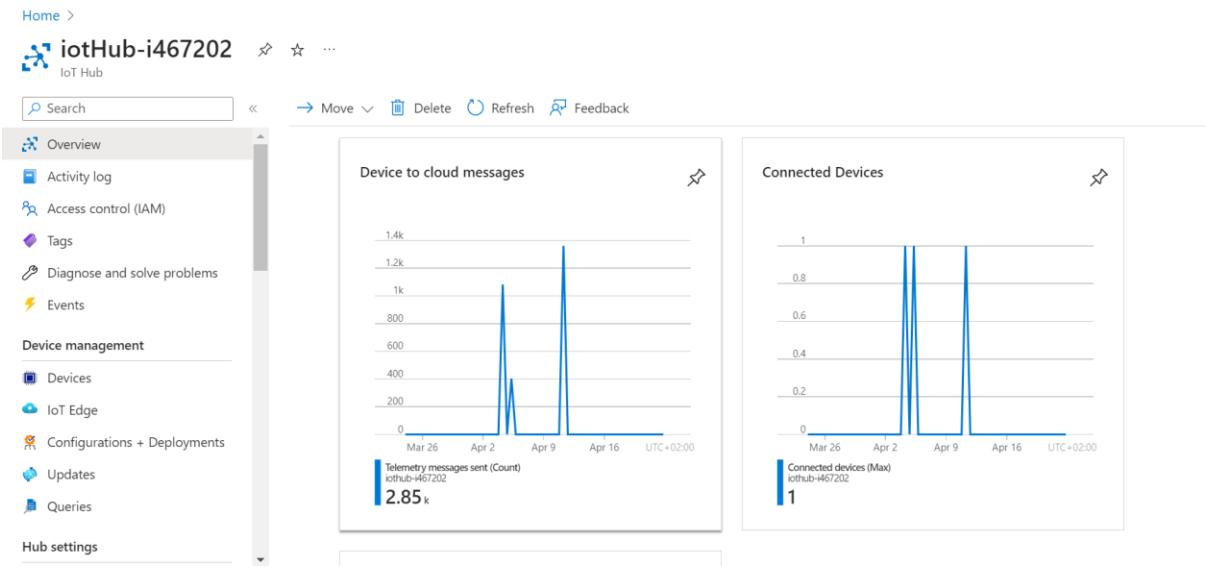
To start with this assignment, I login to Azure account first then create a new device to proceed further with this assignment. A device created can be seen in the image below.



After that, I entered all the credentials into the Iot config.h file of the example code to connect my Esp32 with the Azure via Wi-Fi and the Azure credentials. The screenshot of those credentials is below, where I only used device Id and primary key to configure my example code without changing anything else.

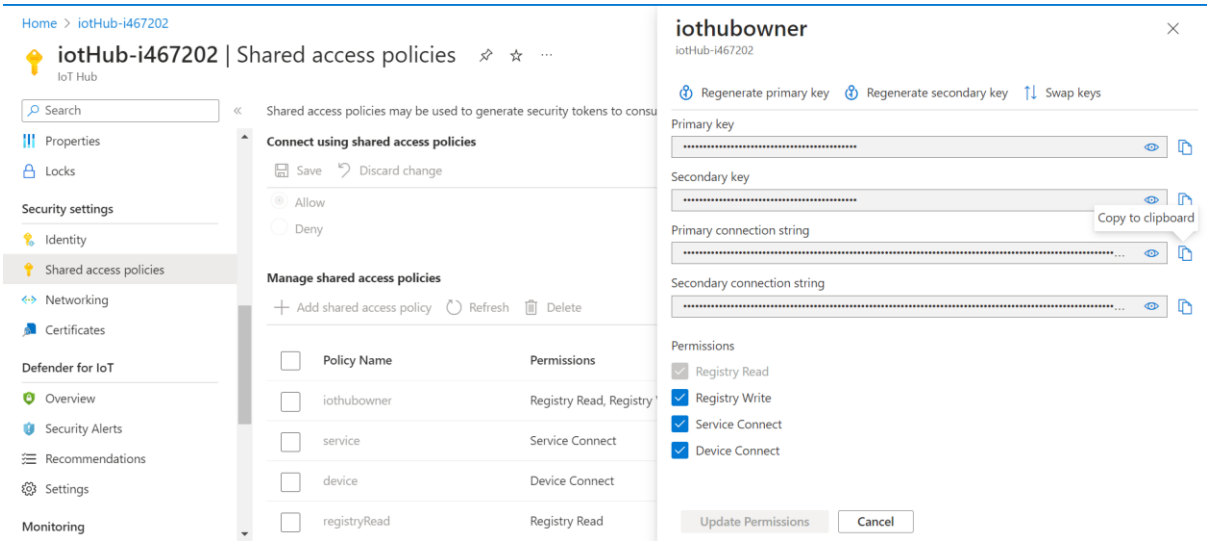

Microsoft Azure
Search resources, services, and docs (G+/)
Home > iotHub-i467202 | Devices >
LoRa_Fontys_IOT_K.P
iotHub-i467202
Save
Message to Device
Direct method
Add Module Identity
Device twin
Refresh
Device ID
LoRa_Fontys_IOT_K.P
Primary key
Secondary key
Primary connection string
Secondary connection string
Tags (edit)
No tags
Enable connection to IoT Hub
Enable
Disable
Parent device
No parent device
Module Identities
Configurations
Module ID
Connection State
Connection State Last Updated ...
Last Activity Time (UTC)

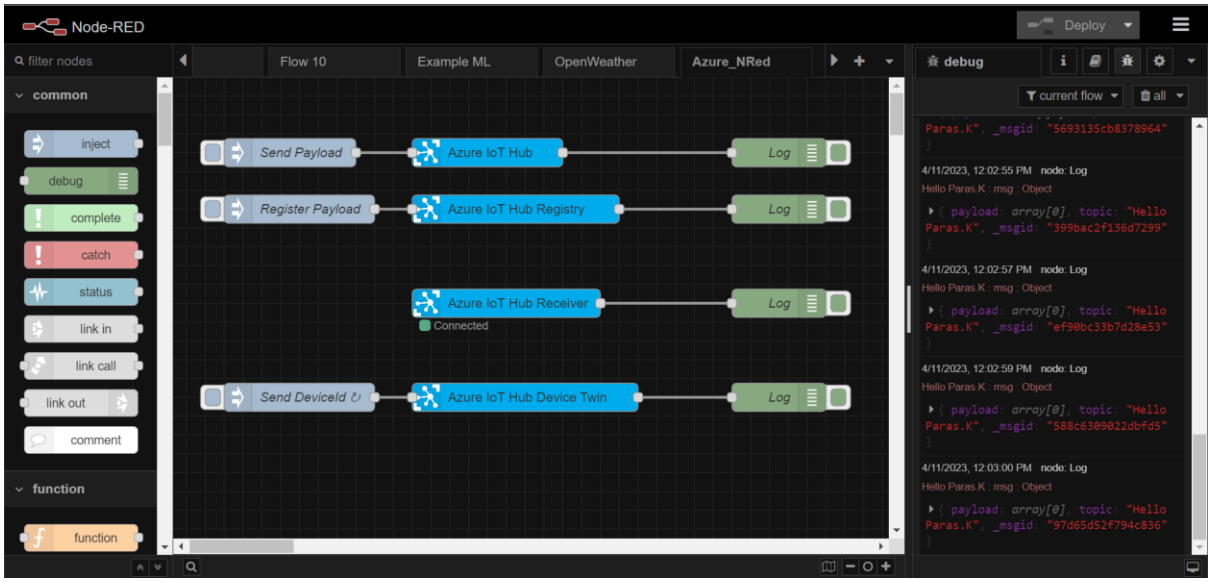

Move
Delete
Refresh
Feedback
IoT Hub Usage
Messages used today: 1091
Daily messages quota: 400000
IoT Devices: 1
1.2k
1k
800
600
400
200
0
6 PM
Apr 4
6 AM
UTC+02:00
Total number of messages used (Max)
iothub-i467202
1.09 k
Device to cloud messages
Connected Devices



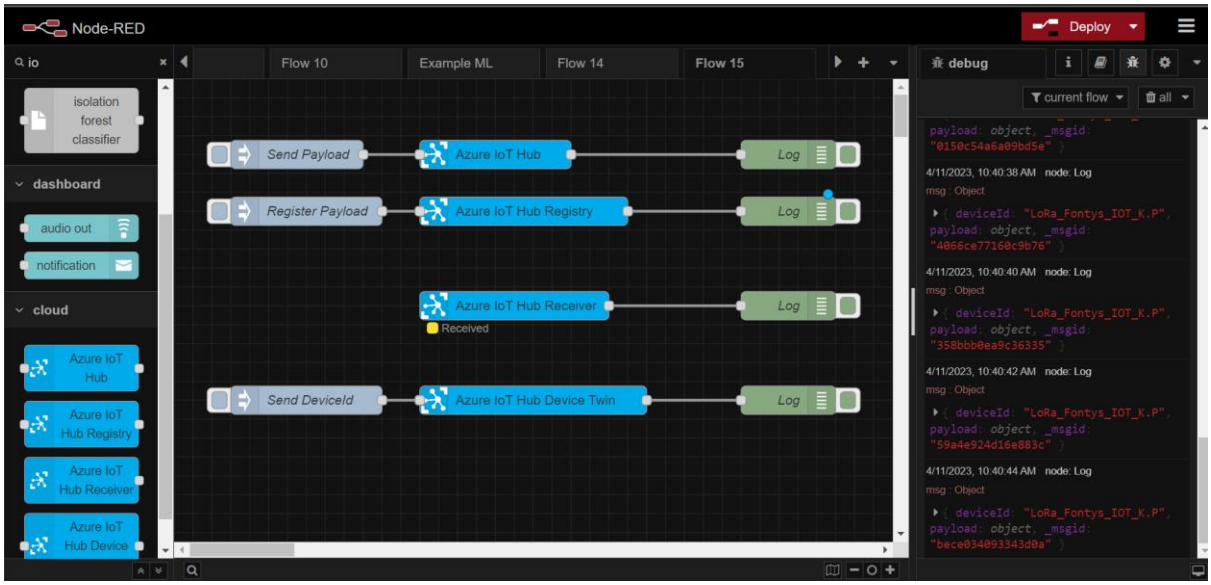
Furthermore, I was able to connect with Azure and start receiving the values and the number of connected devices in the overview page of my account. The results can be seen in the 2 images above.

My next task was to connect Azure with node-red, and I was able to do that by using the “primary connection string” key to the node-red Azure node and the device id. The key for node-red linkage was available in the shared access policies column and then in the Iot hub owner option.





Firstly I downloaded the Azure connector nodes patch in my node-red to connect my node-red with Azure. After adding all the credentials in the node-red i was able to connect with Azure and got success to change the payload messages. The results can be seen in the images above and below.



References

- Microsoft Azure link
  # https://portal.azure.com/#@fhictsky.onmicrosoft.com/resource/subscriptions/9d9474b3-fb9d-4a8a-8dfb-6a4c83c3cbd9/resourceGroups/rg_IOT_i467202/providers/Microsoft.Devices/IotHubs/iotHub-i467202/DeviceExplorer
- Node-red configuration Tutorial with Azure
  # https://flows.nodered.org/node/node-red-contrib-azure-iot-hub\