

Curso: Desenvolvimento Full Stack

Turma: 9001

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Como criar um Hub IoT do Azure;

Adicionando extensão Hub IoT do Azure para Visual Studio Code;



Microsoft Azure portal interface showing the 'Fullstack-estacio54' IoT Hub. The left sidebar lists navigation options like 'Visão geral', 'Log de atividade', 'IAM', etc. The main content area displays the 'Fundamentos' (Basics) tab, showing the IoT Hub's status (Active), location (East US), and associated resource group (grupoNovo). A table on the right lists properties: Nome do host (Fullstack-estacio54.azure-devices.net), Nível (Free), Limite diário de mensagens (8000), and Versão Mínima do TLS (1.0). Below this, three charts are displayed: 'Uso do Hub IoT' (IoT Hub Usage), 'Número de mensagens usadas' (Number of messages used), and 'Mensagens do dispositivo para a nuvem' (Messages from device to the cloud). The 'Uso do Hub IoT' chart shows 3 messages used today, a daily limit of 8000, and 1 IoT device. The 'Número de mensagens usadas' chart shows a sharp increase in message usage around 20:45 UTC-03:00. The 'Mensagens do dispositivo para a nuvem' chart shows a single peak in telemetry messages sent around 20:45 UTC-03:00.

```
File Edit Selection View Go Run Terminal Help
praticIoT

iot.py 2
22 # Define the JSON message to send to IoT Hub.
23 TEMPERATURE = 20.0
24 HUMIDITY = 60
25 MSG_TXT = "{\"temperature\": %.2f,\"humidity\": %.2f}"
26
27 # Temperature threshold for alerting
28 TEMP_ALERT_THRESHOLD = 30
29
30
31 async def main():
32     try:
33         client = IoTHubDeviceClient.create_from_connection_string(CONNECTION_STRING)
34         await client.connect()
35
36         print("IoT Hub device sending periodic messages, press Ctrl-C to exit")
37
38         while True:
39             # Build the message with simulated telemetry values.
40             temperature = TEMPERATURE + (random.random() * 15)
41             humidity = HUMIDITY + (random.random() * 20)
42             msg_txt_formatted = MSG_TXT % (temperature, humidity)
43             message = Message(msg_txt_formatted)
44
45             # Add standard message properties
46             message.message_id = uuid.uuid4()
47             message.content_encoding = "utf-8"
48             message.content_type = "application/json"
49
50             # Add a custom application property to the message.
51             # As IoT Hub can filter on these properties without access to the message body.
52             prop_map = message.custom_properties
53             prop_map["temperatureAlert"] = ("true" if temperature > TEMP_ALERT_THRESHOLD else "false")
54
55             # Send the message.
56             print("Sending message: %s" % message.data)
```

PROBLEMA OUTPUT TERMINAL OUTPUTS Azure DEBUG CONSOLE

Sending message: {"temperature": 25.58,"humidity": 63.37}
Sending message: {"temperature": 34.02,"humidity": 79.63}
Sending message: {"temperature": 30.55,"humidity": 65.10}
Sending message: {"temperature": 24.19,"humidity": 77.98}
Sending message: {"temperature": 22.39,"humidity": 64.53}
Sending message: {"temperature": 27.16,"humidity": 72.98}
Sending message: {"temperature": 28.60,"humidity": 60.13}
Sending message: {"temperature": 31.39,"humidity": 77.48}
Sending message: {"temperature": 27.66,"humidity": 78.96}
Sending message: {"temperature": 33.84,"humidity": 69.89}
Sending message: {"temperature": 28.46,"humidity": 65.21}
Sending message: {"temperature": 28.45,"humidity": 67.33}

Microsoft Azure portal interface showing the 'Fullstack-estacio54' IoT Hub. The left sidebar lists navigation options like 'Visão geral', 'Log de atividade', 'IAM', etc. The main content area displays the 'Fundamentos' (Basics) tab, showing the IoT Hub's status (Active), location (East US), and associated resource group (grupoNovo). A table on the right lists properties: Nome do host (Fullstack-estacio54.azure-devices.net), Nível (Free), Limite diário de mensagens (8000), and Versão Mínima do TLS (1.0). Below this, three charts are displayed: 'Uso do Hub IoT' (IoT Hub Usage), 'Número de mensagens usadas' (Number of messages used), and 'Mensagens do dispositivo para a nuvem' (Messages from device to the cloud). The 'Uso do Hub IoT' chart shows 3 messages used today, a daily limit of 8000, and 1 IoT device. The 'Número de mensagens usadas' chart shows a sharp increase in message usage around 20:45 UTC-03:00. The 'Mensagens do dispositivo para a nuvem' chart shows a single peak in telemetry messages sent around 20:45 UTC-03:00.

Alternar para Bash Reiniciar Gerenciar arquivos Nova sessão Editor Visualização da Web Configurações Ajuda

Your Cloud Shell session will be ephemeral so no files or system changes will persist beyond your current session.

OTD: Azure Cloud Shell now includes Predictive IntelliSense! Learn more: <https://aka.ms/CloudShell/IntelliSense>

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
S /home/leonardo> az iot hub consumer-group create --hub-name Fullstack-estacio54 --name consumerGroup

```
{
  "etag": null,
  "id": "/subscriptions/d386ced-fa8d-bd18-5627833ca965/resourceGroups/grupoNovo/providers/Microsoft.Devices/IotHubs/Fullstack-estacio54/eventHubEndpoints/events/ConsumerGroups/consumerGroup",
  "name": "consumerGroup",
  "properties": {
    "created": "Tue, 10 Jun 2025 08:47:23 GMT",
    "properties": {
      "name": "consumerGroup"
    }
  },
  "resourceGroup": "grupoNovo",
  "type": "Microsoft.Devices/IotHubs/EventHubEndpoints/ConsumerGroups"
}
```

S /home/leonardo> []

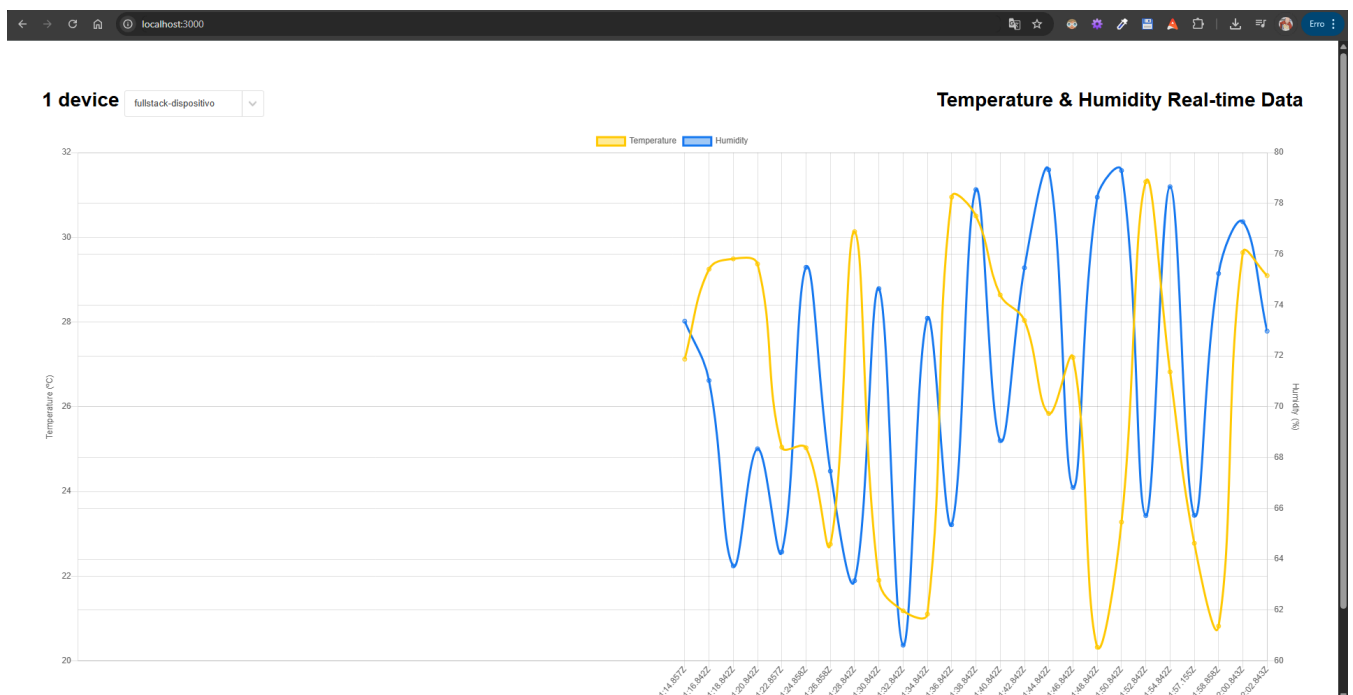
```
npm start
Terminate batch job (Y/N)? y

C:\Users\Navez\Downloads\IoTHub_data_visualization_in_web_application>set IotHubConnectionString=HostName=Fullstack-estacio54.azure-devices.net;
SharedAccessKeyName=service;SharedAccessKey=SdAmoIDwCP1/o0SK5aNTVwrthmETV5T1EAIoTDZZV9o=

C:\Users\Navez\Downloads\IoTHub_data_visualization_in_web_application>npm start

> webapp@0.0.1 start
> node server.js

Using IoT Hub connection string [HostName=Fullstack-estacio54.azure-devices.net;SharedAccessKeyName=service;SharedAccessKey=SdAmoIDwCP1/o0SK5aNT
VwrthmETV5T1EAIoTDZZV9o=]
consumerGroup
Using event hub consumer group [consumerGroup]
Listening on 3000.
Successfully created the EventHubConsumerClient from IoT Hub event hub-compatible connection string.
The partition ids are: [ '0', '1' ]
Broadcasting data {"IotData":{"messageId":1,"deviceId":"Raspberry Pi Web Client","temperature":27.12332530902605,"humidity":73.36369486065158},"
MessageDate":"2025-06-10T01:11:14.857Z","DeviceId":"fullstack-dispositivo"}
Broadcasting data {"IotData":{"messageId":2,"deviceId":"Raspberry Pi Web Client","temperature":29.245959403003937,"humidity":71.03211212507426},"
MessageDate":"2025-06-10T01:11:16.842Z","DeviceId":"fullstack-dispositivo"}
Broadcasting data {"IotData":{"messageId":3,"deviceId":"Raspberry Pi Web Client","temperature":29.49042853379698,"humidity":63.73683875770061},"
MessageDate":"2025-06-10T01:11:18.842Z","DeviceId":"fullstack-dispositivo"}
Broadcasting data {"IotData":{"messageId":4,"deviceId":"Raspberry Pi Web Client","temperature":29.368685591897147,"humidity":68.34426088016113},"
MessageDate":"2025-06-10T01:11:20.842Z","DeviceId":"fullstack-dispositivo"}
```



```
},
"resourceGroup": "grupolovo",
"type": "Microsoft.Devices/IoTHubs/EventHubEndpoints/ConsumerGroups"
}
PS /home/leonardo> az iot hub show-connection-string --hub-name Fullstack-estacio54 --policy-name service
This command has been deprecated and will be removed in a future release. Use 'IoT Extension (azure-iot) connection-string command (az iot hub connection-string show)' instead.
[Warning] This output may compromise security by showing the following secrets: connectionString. Learn more at: https://go.microsoft.com/fwlink/?linkid=2258669
{
  "connectionString": "HostName=Fullstack-estacio54.azure-devices.net;SharedAccessKeyName=service;SharedAccessKey=SdAmoIDwCP1/o0SK5aNTVwrthmETV5T1EAIoTDZZV9o="
}
PS /home/leonardo> ^C
PS /home/leonardo> HostName=Fullstack-estacio54.azure-devices.net;SharedAccessKeyName=service;SharedAccessKey=SdAmoIDwCP1/o0SK5aNTVwrthmETV5T1EAIoTDZZV9o="^Z^C
PS /home/leonardo> az appservice plan create --name app-fullstack --resource-group Grupolovo
(MissingSubscriptionRegistration) The subscription is not registered to use namespace 'Microsoft.Web'. See https://aka.ms/rps-not-found for how to register subscriptions.
Code: MissingSubscriptionRegistration
Message: The subscription is not registered to use namespace 'Microsoft.Web'. See https://aka.ms/rps-not-found for how to register subscriptions.
Exception Details: (MissingSubscriptionRegistration) The subscription is not registered to use namespace 'Microsoft.Web'. See https://aka.ms/rps-not-found for how to register subscriptions.
Code: MissingSubscriptionRegistration
Message: The subscription is not registered to use namespace 'Microsoft.Web'. See https://aka.ms/rps-not-found for how to register subscriptions.
Target: Microsoft.Web
```