



**CAIQUE THOMAZ STOPIGLIA**

Matrícula: 2022.08.29247-1 - Campus POLO VL NEGRELLO - VALINHOS – SP  
4º Período do CURSO SUPERIOR DE TECNOLOGIA EM  
DESENVOLVIMENTO FULL STACK

## Missão Prática nível 5 – Mundo 4

### Vamos interligar as coisas com a Nuvem

#### Objetivo:

- Como criar um Hub IoT do Azure;
- Como registrar um novo dispositivo no Hub IoT;
- Adicionando extensão Hub IoT do Azure para VS Code;
- Gerenciando e interagindo com o Hub IoT.

#### 1 - Login Azure CLI:

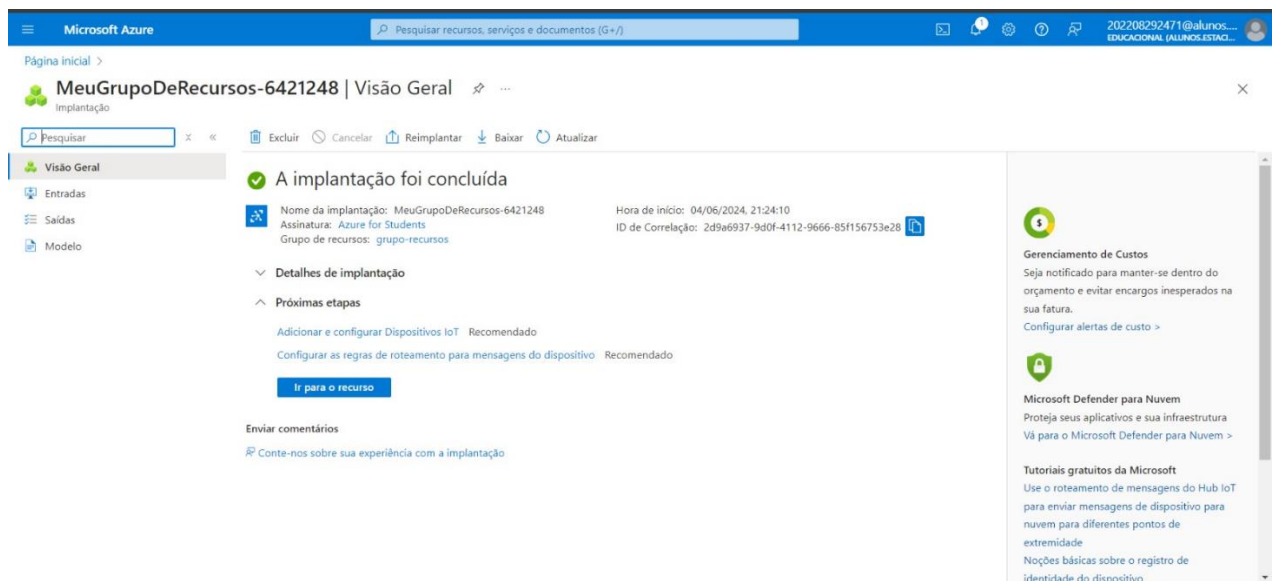
```
public > index.html > @html
1 <!doctype html>
2
3 <html lang="en">
4 <head>
5   <!-- Required meta tags -->
6   <meta charset="utf-8">
7   <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
8
9   <script src="https://code.jquery.com/jquery-3.4.0.min.js" integrity="sha256-H2vEFkXyKeZLmGZBg7AnmS0oYlG6hZQDgJ5XtFKra8=" crossorigin="anonymous" type="text/javascript" charset="utf-8"></script>
10  <script src="https://cdn.jsdelivr.net/npm/chart.js@2.8.0/dist/chart.min.js" type="text/javascript" charset="utf-8"></script>
11  <script src="js/chart-device-data.js" type="text/javascript" charset="utf-8"></script>
12  <link href="css/style.css" rel="stylesheet" />
13</head>
14<body>
15  <div class="container">
16    <div class="row">
17      <div class="col-md-12">
18        <div class="card">
19          <div class="card-body">
20            <div class="text-center">
21              <h1>IoT Hub</h1>
22            </div>
23          </div>
24        </div>
25      </div>
26    </div>
27  </div>
28</body>
29</html>
```

```
PS C:\Users\lquero\OneDrive\Área de Trabalho\Níveis-M\web-apps-node-iot-hub-data-visualization-master> az login
Please select the account you want to log in with.
User Canceled in transfer token flow. Status: Response_Status.Status_UserCanceled, Error code: 0, Tag: 508344210
Please explicitly log in with:
az login
PS C:\Users\lquero\OneDrive\Área de Trabalho\Níveis-M\web-apps-node-iot-hub-data-visualization-master> az login
Please run 'az login' to setup account.
PS C:\Users\lquero\OneDrive\Área de Trabalho\Níveis-M\web-apps-node-iot-hub-data-visualization-master> az login
Please select the account you want to log in with.
User Canceled in transfer token flow. Status: Response_Status.Status_UserCanceled, Error code: 0, Tag: 508344210
Please explicitly log in with:
az login
PS C:\Users\lquero\OneDrive\Área de Trabalho\Níveis-M\web-apps-node-iot-hub-data-visualization-master> az login
Please select the account you want to log in with.
Retrieving tenants and subscriptions for the selection...
No subscriptions found for lquero18@uol.com.
PS C:\Users\lquero\OneDrive\Área de Trabalho\Níveis-M\web-apps-node-iot-hub-data-visualization-master> az login
Please select the account you want to log in with.
Retrieving tenants and subscriptions for the selection...
[tenant and subscription selection]

No Subscription name Subscription ID Tenant
-----
[1] * Azure for Students 0d760803-f6ab-460b-9f45-6abac4a61cf3 Educacional

The default is marked with an *. The default tenant is 'Educacional' and subscription is 'Azure for Students' (0d760803-f6ab-460b-9f45-6abac4a61cf3).
Select a subscription and tenant (type a number or enter for no charges):
```

## 2 – Criando Grupo de Recursos IoT Hub:



## 3 - Adicionar um grupo de consumidores:

```
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> az group create --name MeuGrupoDeRecursos --location "East US"
>> az iot hub consumer-group create --hub-name MeuIoTHub --name grupo-recursos
{
  "id": "/subscriptions/0d7b6093-f0ab-4649-9f45-6a0ac4a61cf3/resourceGroups/MeuGrupoDeRecursos",
  "location": "eastus",
  "managedBy": null,
  "name": "MeuGrupoDeRecursos",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
```

### Resposta do terminal:

```
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> az iot hub create --name MeuloTHub --resource-group MeuGrupoDeRecursos --sku S1 --location "East US"
```

```
{
  "etag": "AAAAAAYAAAA=",
  "id": "/subscriptions/0d7b6093-f0ab-4649-9f45-6a0ac4a61cf3/resourceGroups/MeuGrupoDeRecursos/providers/Microsoft.Devices/IotHubs/MeuloTHub",
  "identity": {
    "principalId": null,
    "tenantId": null,
    "type": "None",
    "userAssignedIdentities": null
  },
  "location": "eastus",
```

```
"name": "MeuloTHub",
"properties": {
  "allowedFqdnList": [],
  "authorizationPolicies": null,
  "cloudToDevice": {
    "defaultTtlAsIso8601": "1:00:00",
    "feedback": {
      "lockDurationAsIso8601": "0:00:05",
      "maxDeliveryCount": 10,
      "ttlAsIso8601": "1:00:00"
    },
    "maxDeliveryCount": 10
  },
  "comments": null,
  "deviceStreams": null,
  "disableDeviceSas": null,
  "disableLocalAuth": null,
  "disableModuleSas": null,
  "enableDataResidency": null,
  "enableFileUploadNotifications": false,
  "encryption": null,
  "eventHubEndpoints": {
    "events": {
      "endpoint": "sb://iothub-ns-meuiothub-60006561-
dcdec9b812.servicebus.windows.net/",
      "partitionCount": 4,
      "partitionIds": [
        "0",
        "1",
        "2",
        "3"
      ]
    }
  }
}
```

```
    ],  
    "path": "meuiothub",  
    "retentionTimeInDays": 1  
  }  
},  
"features": "RootCertificateV2",  
"hostName": "MeuloTHub.azure-devices.net",  
"ipFilterRules": [],  
"ipVersion": null,  
"locations": [  
  {  
    "location": "East US",  
    "role": "primary"  
  },  
  {  
    "location": "West US",  
    "role": "secondary"  
  }  
],  
"messagingEndpoints": {  
  "fileNotifications": {  
    "lockDurationAsIso8601": "0:00:05",  
    "maxDeliveryCount": 10,  
    "ttlAsIso8601": "1:00:00"  
  }  
},  
"minTlsVersion": null,  
"networkRuleSets": null,  
"privateEndpointConnections": null,  
"provisioningState": "Succeeded",
```

```
"publicNetworkAccess": null,
"restrictOutboundNetworkAccess": null,
"rootCertificate": {
  "enableRootCertificateV2": true,
  "lastUpdatedTimeUtc": "2024-06-05T00:23:41.477440+00:00"
},
"routing": {
  "endpoints": {
    "cosmosDbSqlContainers": [],
    "eventHubs": [],
    "serviceBusQueues": [],
    "serviceBusTopics": [],
    "storageContainers": []
  },
  "enrichments": null,
  "fallbackRoute": {
    "condition": "true",
    "endpointNames": [
      "events"
    ],
    "isEnabled": true,
    "name": "$fallback",
    "source": "DeviceMessages"
  },
  "routes": []
},
"state": "Active",
"storageEndpoints": {
  "$default": {
    "authenticationType": null,
```

```

    "connectionString": "",
    "containerName": "",
    "identity": null,
    "sasTtlAsIso8601": "1:00:00"
  }
}
},
"resourcegroup": "MeuGrupoDeRecursos",
"sku": {
  "capacity": 1,
  "name": "S1",
  "tier": "Standard"
},
"subscriptionid": "0d7b6093-f0ab-4649-9f45-6a0ac4a61cf3",
"systemData": {
  "createdAt": "2024-06-05T00:24:05.046666+00:00",
  "createdBy": null,
  "createdByType": null,
  "lastModifiedAt": null,
  "lastModifiedBy": null,
  "lastModifiedByType": null
},
"tags": {},
"type": "Microsoft.Devices/IotHubs"
}

```

#### 4 - Definir variáveis de ambiente:

```

PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master>
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master>
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> set IotHubConnectionString=MeuIoTHub
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> set EventHubConsumerGroup=MeuGrupoDeRecursos
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> az iot hub show-connection-string --hub-name MeuIoTHub --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.
{
  "connectionString": "HostName=MeuIoTHub.azure-devices.net;SharedAccessKeyName=service;SharedAccessKey=TsUpzE6m15/fGpXDFM30ejN8PW//aABXuAIoTPtXxVg="
}
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master>

```

## 5 - Rodando aplicação:

```
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.
{
  "connectionString": "HostName=MeuIoTHub.azure-devices.net;SharedAccessKeyName=service;SharedAccessKey=TsUpzE6m15/fgPxDFM30ejN8PM//aABXuAiToTPtXxVg="
}
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> npm run
Lifecycle scripts included in webapp@0.0.1:
  start
    node server.js
```

```
found 0 vulnerabilities
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> npm start

> webapp@0.0.1 start
> node server.js

Environment variable IotHubConnectionString must be specified.
PS C:\Users\iques\OneDrive\Área de Trabalho\Nivel5-M4\web-apps-node-iot-hub-data-visualization-master> 
```

