

# STM32U5 Azure Quick Connect

## Software Requirements

- [Python 3](#)
  - Ensure install includes pip
- [PySerial](#)
  - Install using pip

## Hardware Requirements

- [B-U585I-IOT02A Discovery Kit](#)
- Micro-USB Cable

## Create an Azure IoT Central Application

Click the [Quick Connect Application Template](#) and login with a valid Microsoft account (no subscription required)

After choosing a unique Application name, URL, and Pricing plan click 'Create'

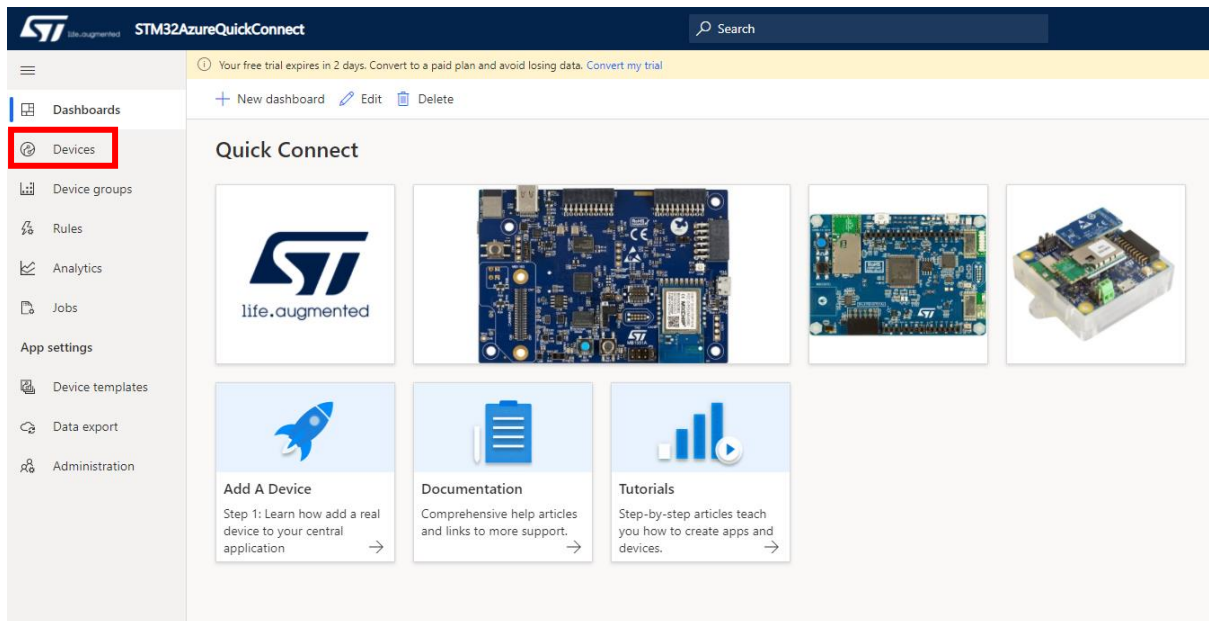
The screenshot shows the 'About your app' configuration page in the Azure IoT Central portal. The page title is 'STM32' with a subtitle 'Seamlessly connect your STM32 device to this IoT Central Application in minutes.' The left sidebar contains navigation links: Home, Build (selected), and My apps. The main form area includes the following sections:

- Application name \***: A text input field containing 'STM32AzureQuickConnect'.
- URL \***: A text input field containing 'stm32azurequickconnect' and a domain dropdown set to '.azureiotcentral.com'.
- Pricing plan**: A list of four options with radio buttons:
  - Free** (selected): 'Try for 7 days with no commitment', '5 free devices'.
  - Standard 0**: 'For devices sending a few messages per day', '2 free devices', '400 messages/mo'.
  - Standard 1**: 'For devices sending a few messages per hour', '2 free devices', '5,000 messages/mo'.
  - Standard 2 (most popular)**: 'For devices sending messages every few minutes', '2 free devices', '30,000 messages/mo'.

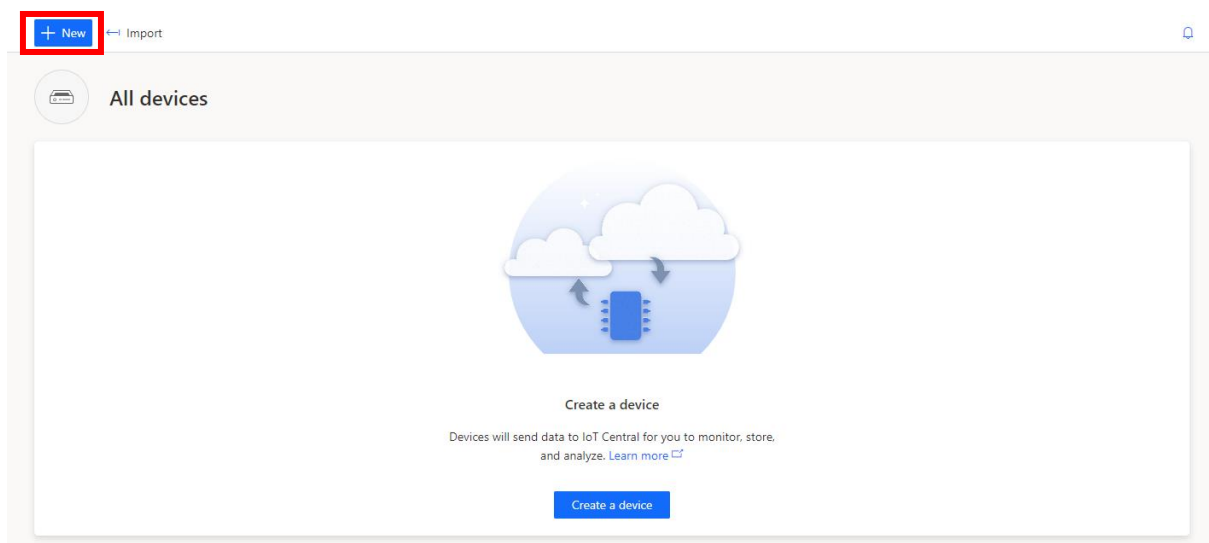
At the bottom, there is a disclaimer: 'By clicking "Create" you agree to the [Subscription Agreement](#) and [Privacy Statement](#). Provisions in the agreement with respect to pricing, cancellation fees, payment, and data retention do not apply to "Free". "Standard" plans require an Azure subscription, and you acknowledge that this service is licensed to you under the terms applicable to your [Azure Subscription](#).' Below the disclaimer are two buttons: 'Create' (in blue) and 'Cancel' (in white).

## Add A Device Your Central Application

In the menu on the left select 'Devices'



Select 'New' to add a new device



Enter a unique 'Device name' and 'Device ID'  
Choose 'B-U585I-IOT02A IoT Node 2 discovery kit.' as the Device Template.  
Make sure 'Simulate this device' is not selected  
And select 'Create'

### Create a new device



To create a new device, select a device template, a name, and a unique ID. [Learn more](#)

Device name \* ⓘ

STM32U5

Device ID \* ⓘ

STM32U5

Organization \* ⓘ

STM32AzureQuickConnect

Device template \*

B-U585I-IOT02A IoT Node 2 discovery kit.



Simulate this device?

A simulated device generates telemetry that enables you to test the behavior of your application before you connect a real device.

☐ No

Create

Cancel

Your new device should now populate in the devices tab

+ New ← Import




All devices

Device name	Device ID	Device status	Device template	Organization	Simulated
STM32U5	STM32U5	Registered	B-U585I-IOT02A IoT Node ...	STM32AzureQuickConnect	No

## Collect Connection Credentials

Click on the 'Device Name' of the device you wish to connect to

[+ New](#) [← Import](#) [📅](#) [🔍](#) [🔔](#)


 All devices

Device name	Device ID	Device status	Device template	Organization	Simulated
STM32U5	STM32U5	Registered	B-U585I-IOT02A IoT Node ...	STM32AzureQuickConnect	No

Click 'Connect'

[🔗 Connect](#) [📄 Manage template](#) [🔗 Manage device](#)

Devices > B-U585I-IOT02A IoT Node 2 discovery kit. > STM32U5

 **STM32U5**  
Last data received: N/A | Status: Registered | Organization: STM32AzureQuickConnect

[About](#) [Overview](#) [Raw data](#)

Device model, Software version, Operating system name... ↗

Device model	No Value read only device property
Software version	No Value read only device property
Operating system name	No Value read only device property
Processor architecture	No Value read only device property
Total storage	No Value read only device property
Total memory	No Value read only device property
Transmission period for tele...	No Value
Acc FS	No Value

Manufacturer, Processor manufacturer ↗

Manufacturer	No Value read only device property
Processor manufacturer	No Value read only device property

Here you can view all the required device Connection Credentials

## Device connection



ID scope ⓘ

One



Device ID ⓘ

STM32U5



Choose the connection type for this device. You can change this later if you need to.

Authentication type

Shared access signature (SAS)



Key    QR code

Shared Access Signatures (SAS) use security tokens and keys to connect to IoT Central. Use the SAS keys from the default enrollment group shown below to register your device. [Learn more](#)

Primary key ⓘ

mCWu



Secondary key ⓘ

Jvu



In File Explorer Navigate to STM32\_Azure\_QuickConnect and open Config.txt

📁 > This PC > Windows (C:) > STM32_Azure_QuickConnect				
Name	^	Date modified	Type	Size
📁 .git		10/5/2021 11:31 AM	File folder	
📁 Binaries		10/18/2021 10:34 AM	File folder	
📄 Config.txt		10/18/2021 10:33 AM	Text Document	1 KB
📖 README.md		8/19/2021 9:08 AM	MD File	1 KB
📄 U5_QuickConnect.py		10/5/2021 11:31 AM	Python File	6 KB

Enter the Wi-Fi SSID and Password for your 2.4Ghz network

Copy and Paste the ID Scope, Device ID, and Primary Key into this file and save.

 Config.txt - Notepad

File Edit Format View Help

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SSID: MySSID

PASSWORD: MyPSWD

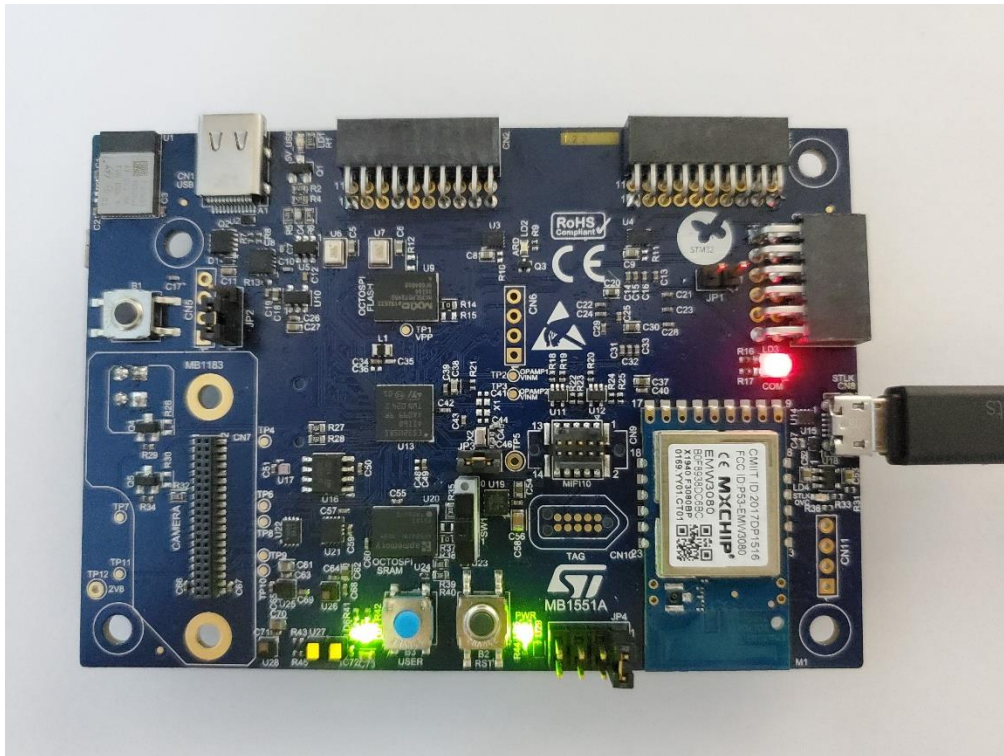
IDSCOPE: 0ne

DeviceID: STM32U5

PRIMARYKEY: mCwu

## Run U5\_QuickConnect.py

Connect your Discovery Kit using the Micro-USB cable as pictured below



In File Explorer Navigate to STM32\_Azure\_QuickConnect and run U5\_QuickConnect.py

This PC > Windows (C:) > STM32_Azure_QuickConnect				
Name	Date modified	Type	Size	
.git	10/5/2021 11:31 AM	File folder		
Binaries	10/18/2021 10:34 AM	File folder		
Config.txt	10/18/2021 11:27 AM	Text Document	1 KB	
README.md	8/19/2021 9:08 AM	MD File	1 KB	
U5_QuickConnect.py	10/18/2021 11:25 AM	Python File	6 KB	

Script logs can be seen in the window:

```
C:\windows\py.exe
STM32 COM Port Found: COM8
STM32 File Path Found: D:\
Collected SSID From Config.txt:
Collected PSWD From Config.txt:
Collected PSWD From Config.txt:
Collected PSWD From Config.txt: STM32U5
Collected PSWD From Config.txt:
Flashing Binaries\STM32U585_DK_EEPROM.bin to D:\
Storing Endpoint 'global.azure-devices-provisioning.net'
Storing SSID
Storing Password
Storing Scope ID
Storing Thing Name 'STM32U5'
Storing Primary Key
Flashing Binaries\B-U585I-IOT02A_SampleApp.bin to D:\
Software version: 04202021 Beta (sdk_samples_revC)
CPU Freq 160 Mhz
Init IIS2MDC
Init ISM330DHCX
Init HTS221
Init LPS22HH
DHCP In Progress...
Built for Board RevB or RevC
Product name: MXCHIP-WIFI
Product ID: EMW3080B
FW revision: V2.1.11

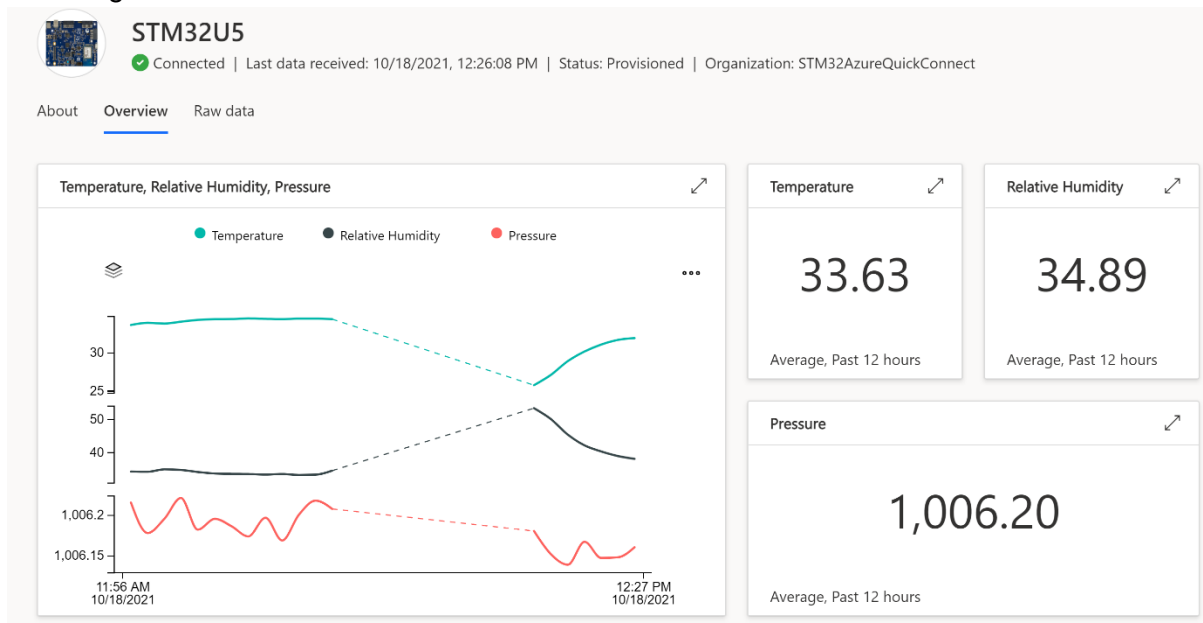
MAC 04.78.63.39.48.71
Joined Frontier9424
IP address: 192.168.254.141
Mask: 255.255.255.0
Gateway: 192.168.254.254
DNS Server address: 192.168.254.254
SNTP Time Sync...
SNTP Time Sync successfully.
ACC ODR ISM330DHCX
Acc FS ISM330DHCX
Gyro ODR ISM330DHCX
Gyro FS ISM330DHCX
ODR IIS2MDC
ODR HTS221
ODR HTS221
ODR LPS22HHC
[INFO] Azure IoT Security Module has been enabled, status=0
@830
SAMPLE_INITIALIZATION_EVENT
Start Provisioning Client...
[INFO] IoTProvisioning client connect pending
Registered Device Successfully.
IoTHub Host Name: iotc-6a7fa09a-f7d0-41e5-abbd-e49c41ef7010.azure-devices.net
Device ID: STM32U5
@1836
SAMPLE_CONNECT_EVENT
Connected to IoTHub.
last_periodic_action_tick=1937
@1937
SAMPLE_TELEMETRY_SEND_EVENT

STD_COMP Accelerometer Telemetry message send:
- Component std_comp
- Message: {"acceleration":{"a_x":-22,"a_y":-20,"a_z":1022},"gyroscope":{"g_x":210,"g_y":-437,"g_z":-192},"magnetometer":{"m_x":171,"m_y":228,"m_z":-562},"temperature":33.51,"humidity":34.17,"pressure":1006.08}
SAMPLE_DEVICE_REPORTED_PROPERTIES_EVENT
```



## Monitor Device Activity

Navigate back to your device in your central application and you can see a summary of the incoming data



## Under 'Raw data' specific MQTT messages can be viewed

Devices > B-U585I-IOT02A IoT Node 2 discovery kit > STM32U5

STM32U5  
Connected | Last data received: 10/18/2021, 12:34:47 PM | Status: Provisioned | Organization: STM32AzureQuickConnect

About Overview **Raw data**

Timestamp ↓	Message type	Event creation time	LIS3MDL Mag Value [mgauss]	LSM6DSL Acc Value [mg]	LSM6DSL Gyro Value [mdps]	Pressure
10/18/2021, 12:34:26 PM	Telemetry		("m_x":-139,"m_y":517,"m_z":...	("a_x":-25,"a_y":-33,"a_z":1022)	("g_x":210,"g_y":-437,"g_z":...	1006.12
10/18/2021, 12:34:21 PM	Telemetry		("m_x":-138,"m_y":519,"m_z":...	("a_x":-25,"a_y":-32,"a_z":1023)	("g_x":140,"g_y":-437,"g_z":...	1006.07
10/18/2021, 12:34:16 PM	Telemetry		("m_x":-138,"m_y":532,"m_z":...	("a_x":-26,"a_y":-32,"a_z":1022)	("g_x":52,"g_y":-437,"g_z":1...	1006.09
10/18/2021, 12:34:11 PM	Telemetry		("m_x":-130,"m_y":525,"m_z":...	("a_x":-25,"a_y":-32,"a_z":1022)	("g_x":245,"g_y":-472,"g_z":...	1006.08
10/18/2021, 12:34:06 PM	Telemetry		("m_x":-126,"m_y":526,"m_z":...	("a_x":-25,"a_y":-33,"a_z":1022)	("g_x":157,"g_y":-472,"g_z":...	1006.11
10/18/2021, 12:34:01 PM	Telemetry		("m_x":-133,"m_y":516,"m_z":...	("a_x":-25,"a_y":-29,"a_z":1023)	("g_x":157,"g_y":-455,"g_z":...	1006.19