

IoT Button

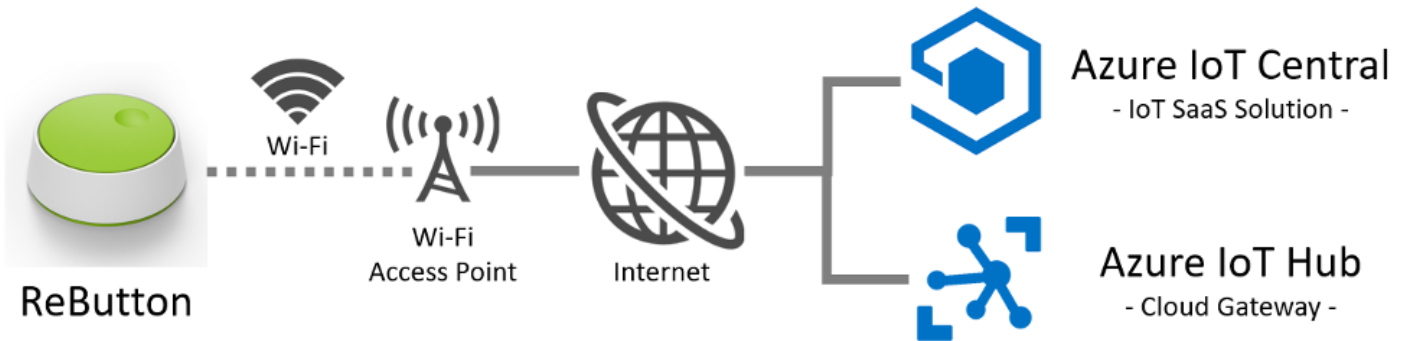
In this tutorial, we will try to connect ReButton with Azure IoT Central and integrate with Power Automate to provide different IoT solutions.

About ReButton

Build IoT solutions with IoT Button!

Seed [ReButton](#) is a developer device for simple trigger actions, supporting multiple clicks and long press. In addition, you can connect Seed Grove sensors to add more data points.

1. When you push ReButton, it will power up and connect to Internet via pre-configured Wi-Fi.
2. ReButton will receive Device Twin changes from pre-configured Azure IoT Central or Azure IoT Hub.
3. ReButton will send Device to Cloud Message to pre-configured Azure IoT Central or Azure IoT Hub.
4. After D2C message is sent, ReButton will shutdown.



Note: Part of tutorial based on [Docs for ReButton](#) and [IoT Central Documentation](#) with the update of Azure IoT Central V3.

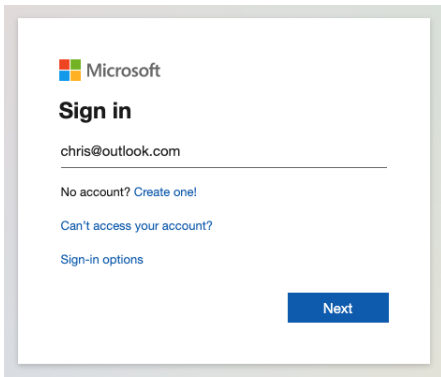
Prerequisites

Join the Microsoft 365 Developer Program

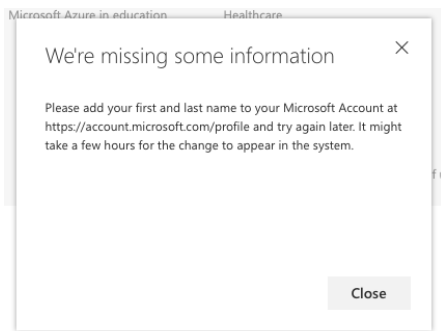
1. Goto [Microsoft 365 Dev Center](#) and click [Join Now](#)



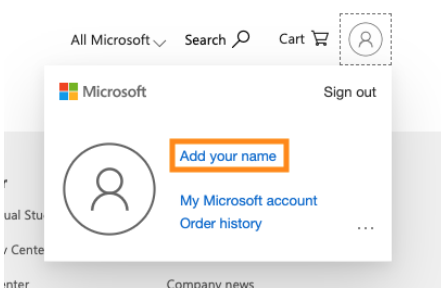
2. Login with your personal Microsoft account, you could create one if you do not have Microsoft account.



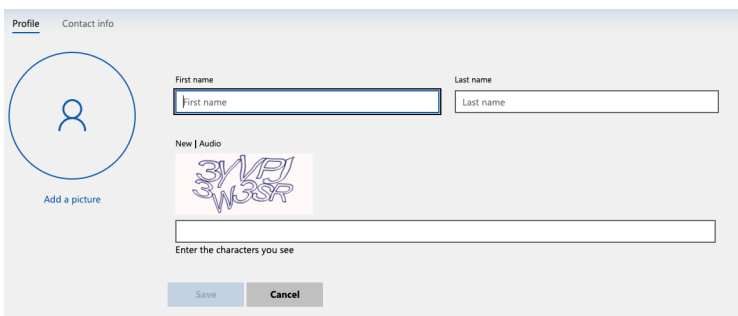
2.1 If you see this message, your account may missing some information, mostly will be the full name of the account.



2.2 Click the top-right corner to view your account information and click Add your name .



2.3 Fill in your first name and last name, then click save , sign out and login again at Microsoft 365 Dev Center to continue.



3. Follow the instructions and complete all the fields needed.

Microsoft 365 Developer Program Signup

Welcome to the Microsoft 365 Developer Program!

First Name:
Last Name:
Email:

Country/Region *

Company *

Please enter no more than 60 characters.

Language preference *

English

☐ I accept the [terms and conditions](#) of the Microsoft 365 Developer Program. Note that certain data will be collected from use of the Microsoft 365 developer subscriptions to help us assess active development of applications as required under this program.

☐ I would like information, tips, and offers about the Microsoft 365 Developer Program.

Please refer to the [privacy statement](#) for more information.

Next

Follow us

Microsoft 365 Developer Program Preferences

Complete the following fields to help us personalize your experience.

What industry do you work in?

Please select from the following options

What is your primary focus as a developer? * (Choose only one)

☐ Applications to be sold in market
☐ Applications for internal use at my company
☐ Custom solutions for my own customers
☐ Personal projects

What are your areas of interest? *

Products (Check all that apply)

☐ Access
☐ Azure AD
☐ Azure AD
☐ Bookings
☐ Excel
☐ Kallidate
☐ Microsoft Edge
☐ Microsoft Teams

Technologies (Check all that apply)

☐ Actionable messages
☐ Adaptive cards
☐ Office Add-ins
☐ Connectors

☐ Office 365
☐ OneDrive
☐ OneNote
☐ Outlook
☐ Planner
☐ Power BI
☐ Power Apps

☐ Data visualizations
☐ Fluid Framework
☐ Microsoft Bot Framework
☐ Microsoft Graph

☐ PowerPoint
☐ Project
☐ SharePoint
☐ Visio
☐ Windows
☐ Word
☐ Yammer

☐ Microsoft identity platform
☐ Office UI Fabric
☐ SharePoint Framework (SPFx)
☐ Tabs

4. Click SET UP E5 SUBSCRIPTION

Microsoft 365 Developer Program



Welcome,

Your Microsoft 365 developer program membership entitles you to a special free Microsoft 365 E5 subscription with all the latest Microsoft 365 apps, Enterprise Mobility + Security, Azure AD, and more. You can use this subscription to build a developer sandbox.

Set up your free Microsoft 365 E5 developer subscription now!

[SET UP E5 SUBSCRIPTION >](#)

5. Fill in the information, for username will suggest "admin", for domain please choose a domain name which is not yet be chosen by anyone. You will create an account `admin@yourdomain.onmicrosoft.com`, we will use this account for following labs and tutorials, so keep your password and account in safe. Click `Continue` and add your phone number for verification.

Set up your Microsoft 365 E5 developer subscription

Country/Region *
Hong Kong
Your region can't be changed after sign up.

Create username *
admin

Create domain *
iottutorial
admin@iottutorial.onmicrosoft.com

Password *
Create Password

Confirm Password *
Confirm Password

Please refer to the [privacy statement](#) for more information.

* Required field

[Cancel](#) [Continue](#)

6. You have successfully created your Microsoft 365 developer account with E5 subscription, to know more about E5 subscription please visit [this link](#).

iottutorialtestingfordemo.on...

Renewable E5
subscription
Expires on Dec 6, 2020

Administrator
admin@iottutorialtestingfordemo.onmicrosoft.com

Users
25 user licenses

91 /91
days left

[Go to subscription](#)

Sample data packs

[+ Users](#) [+ Mail & Events](#) [+ SharePoint](#)

Install the Users sample data pack first.

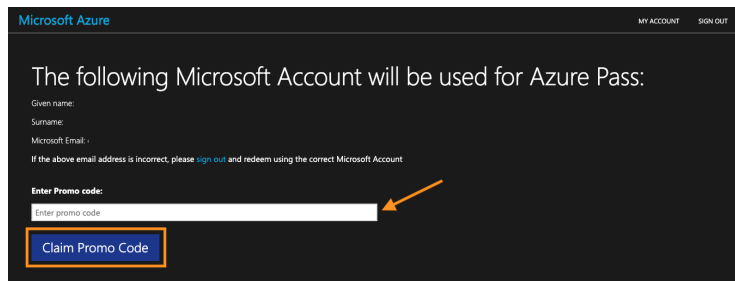
Reference

- [Welcome to the Microsoft 365 Developer Program](#)
- [Set up a Microsoft 365 developer subscription](#)

Redeem the Azure Pass

After created the `onmicrosoft.com` account, we need an active subscription for creating the IoT Central in Azure.

1. Visit [Azure Pass](#) website, click `start` and login with your `onmicrosoft.com` account.
2. Confirm your email address is correct, then click `confirm` and enter your Azure Pass promotion code, click `Claim Promo Code` .

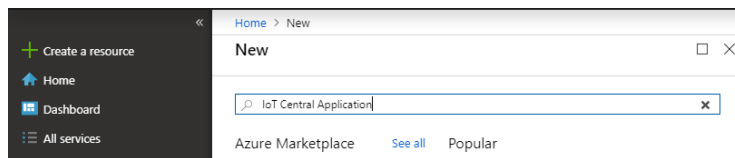


3. Follow the instruction and fill in the information, you will be redirected to the [Azure Portal](#).

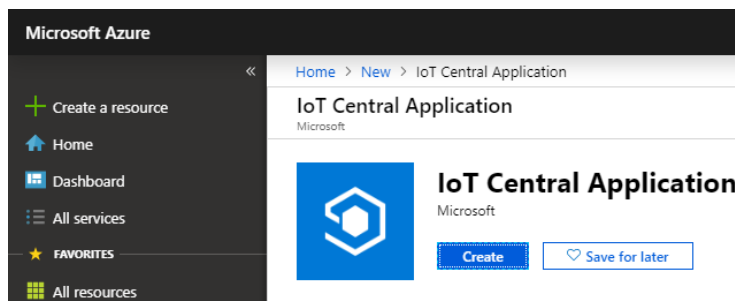
Getting Started

Step 1 - Create IoT Central

1. Sign in [Azure Portal](#)
2. Click `Create a resource` and search `IoT Central Application`



3. Create `IoT Central Application`




4. Fill in `resource name` , `Application URL` , and set template as `Custom Application` . Pricing plan can choose either `Standard 1` or `Standard 2` . Then click `create` .


Home > New > IoT Central Application > IoT Central Application


IoT Central Application


IoT Central Application


* Resource name


* Application URL
 
.azureiotcentral.com

* Template
 
[Learn more about application template](#)

* Pricing tier
 
[Learn more about pricing](#)

* Subscription
 

* Resource group
 
[Create new](#)

* Location
 

[Create](#) [Automation options](#)









Step 2 - Create ReButton Template

1. Access IoT Application URL and login with your Microsoft Account.
2. Navigate to the Device Templates page.
3. Create the ReButton device temmplate by clicking the + New button.
4. Scroll down and find "ReButton", select it and click Next: Review .
5. Confirm the information and click create .

Device templates > **Create new**

Select template type

- Customize device
- Review

STEVAL-STWINK11 The STWIN SensorTile wireless industrial node is a development kit and reference design that simplifies prototyping and testing of advanced industrial IoT	B-L475E-IOT01A The B-L475E-IOT01A Discovery kit for IoT node allows users to develop applications with direct connection to Microsoft Azure IoT cloud servers. The Discovery kit	AIIS-3410P Machine Vision Inspection System support Intel 7th/6th Gen Core i Processor	IPC-220 Compact Industrial Computer System supports Intel® 6th/7th Gen Core™ i CPU socket-type (LGA1151) with Intel® Q170/H110 chipset, Dual GbE, 8 USB, 2-3
IoT Plug and Play  ReButton Sees ReButton is a developer device for simple trigger actions, supporting multiple clicks and long press. In addition, you can connect Sees Grove	IoT Plug and Play  MXChip IoT DevKit The MXChip IoT DevKit is an Arduino compatible board with rich peripherals and sensors. The board features ARM Cortex-M processors. At its core, it comes	IoT Plug and Play  AzureKit_ESP32 The ESP32-Azure IoT Kit integrates an OLED screen and five sensors. This board can get connected to, and perform data exchange with, a variety of cloud	IoT Plug and Play  COM-WHUC6 COM Express Compact Type 6 with 8th Gen Intel® Core™ UAT SoC
IoT Plug and Play  Advantech-SOM-6882 COMe Compact Form Factor With Intel Whiskeylake U platform	IoT Plug and Play  Advantech-ARK-1124 Intel Atom™ N3350/E3930 DC SoC With Four Serial Ports Modular Fanless Box PC	IoT Plug and Play  Advantech-UTX-3117 Advantech UTX-3117 is a plug & play IoT gateway to simplify your deployment with multi-connectivity, optimized thermal solution, wide range power input and IoT	IoT Plug and Play  ME310G1 Telit's miniature eE310 family featuring Cat M1 and NB2 and 2G fallback technologies delivers high business and technical value for IoT projects looking for

Next: Review Cancel

Step 3 - Create Device Template View

1. In "ReButton" template, click "Overview" under "Views".
2. In "Edit view", you can delete the previous blocks on left hand side.

Device templates > ReButton > Views > **Overview**

ReButton
Application updated: 13 days ago Interfaces published: 23 days ago

ReButton

- Device Information
- um:seeddk:Interface:PushButto...
- um:seeddk:Interface:Battery:1
- Cloud properties
- Customize
- Views
 - Overview**
 - About

Save Delete Configure preview device

Edit view

View settings

View name * Overview

Add a tile

Drag single elements (like Humidity) onto your view, or select multiple elements from a single category and then click **Add tile**.

Telemetry

Create chart, state, event, last known value (LKV), and key performance indicator (KPI) tiles.

☐ Action number
☐ Battery voltage
☐ Message

Add tile Clear

Action number

Timestamp	State Name	Value
	Action number	Single click
	Action number	Double click
	Action number	Triple click
	Action number	Long press
	Action number	Super long press

Battery voltage (V)

Message

Timestamp	Event Name	Event Value
	Message	

3. In "Telemetry", select "Action number", then click Add tile . Repeat the step and select "Battery voltage", "Message" respectively.

^ Add a tile

Drag single elements (like Humidity) onto your view, or select multiple elements from a single category and then click **Add tile**.

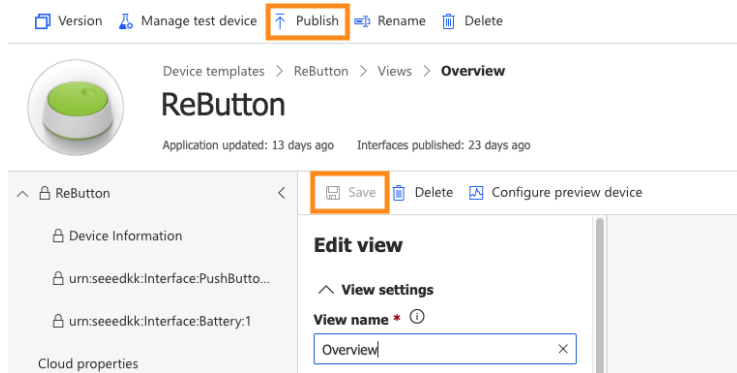
^ Telemetry

Create chart, state, event, last known value (LKV), and key performance indicator (KPI) tiles.

☒ Action number
☐ Battery voltage
☐ Message

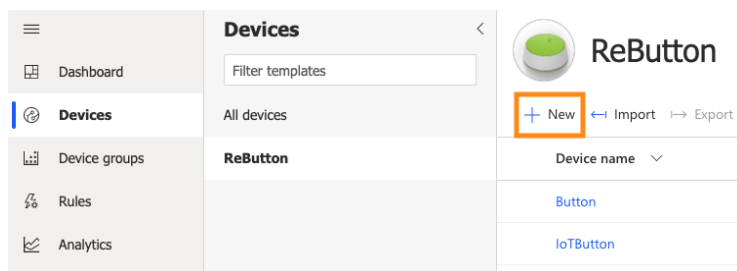
Add tile Clear

4. After editing, click save and Publish , confirm the publish information and click Publish again.



Step 4 - Create Device

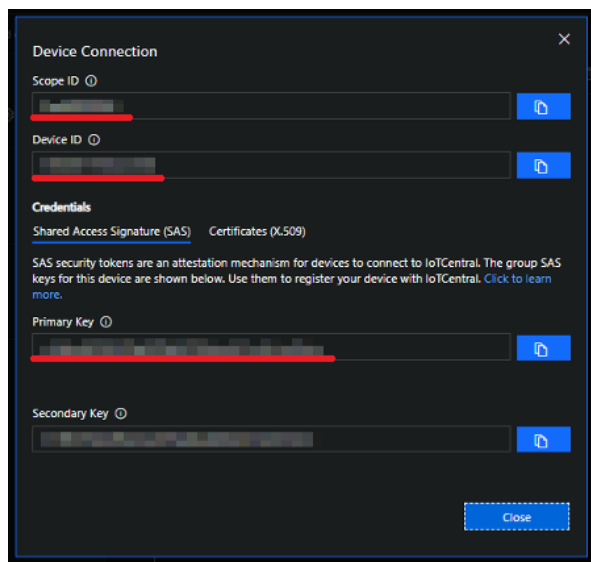
1. Create a device in your ReButton template, in "Devices" select the "ReButton" template and click + New . Then confirm the information and click create .



2. Click connect on Top Right corner of Azure IoT Central page.



3. Copy 3 values. Scope ID Device ID Primary Key

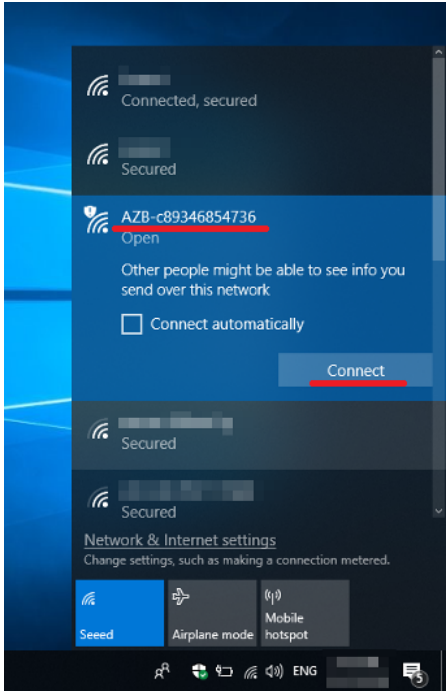


Step 5 - Getting access to IoT button

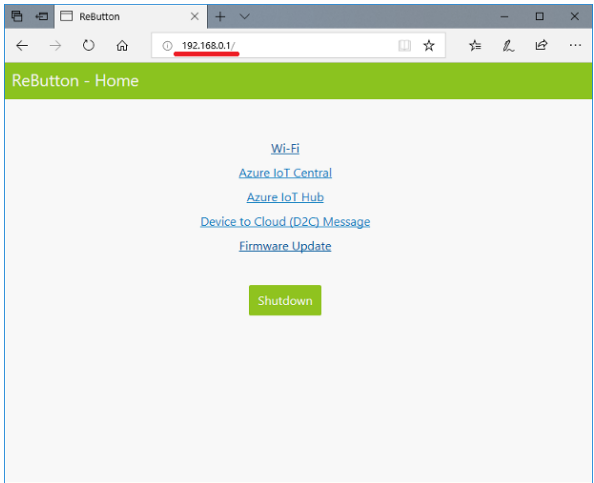
Use AP Mode (Access Point Mode) to configure IoT button. **To avoid battery drain, IoT button will automatically shutdown in 10 minutes, at AP mode.** So that we recommend you to setup IoT Hub or IoT Central, first.

1. **Hold button until RGB LED turns into White.** RGB LED will start with Blue, Yellow, Cyan, then White. This will take about 10 seconds.
2. **Release button and confirm IoT button is in AP mode.** When IoT button successfully boots into AP Mode, RGB LED will blink in White.

3. **Connect to AP.** Look for Wi-Fi Access Point `AZB-xxxxxxxxxx` and connect to it from your PC. (`xxxxxxxxxx` is MAC address of your IoT button Wi-Fi.)



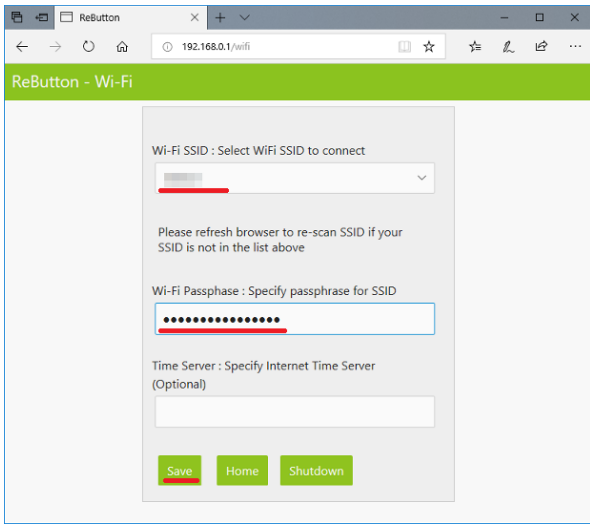
Use a Web Browser to access IoT button - Home at `http://192.168.0.1`.



Step 6 - Wi-Fi Configuration

Configure Wi-Fi settings to connect to Internet.

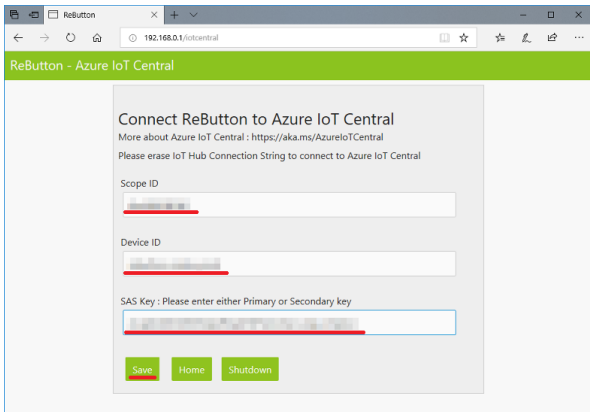
1. Click `Wi-Fi` at IoT button - Home.



2. Select your Wi-Fi Access Point from `wi-fi ssid` list. If you do not see your Access Point, refresh browser.
3. Enter `Wi-Fi Passphrase` for your Wi-Fi AP.
4. (Optional) In case you would like to use specific Internet `Time Server` , enter FQDN to Time Server. Default Internet Time Server is `pool.ntp.org` -> `cn.pool.ntp.org` -> `europa.pool.ntp.org` -> `asia.pool.ntp.org` -> `oceania.pool.ntp.org` .
5. Click `Save` .

Step 7 - Azure IoT Central Configuration

1. Browse to IoT button - Home page then click `Azure IoT Central` .
2. Enter `Scope ID` , `Device ID` , `SAS Key` from Azure IoT Central.
3. Click `Save` .



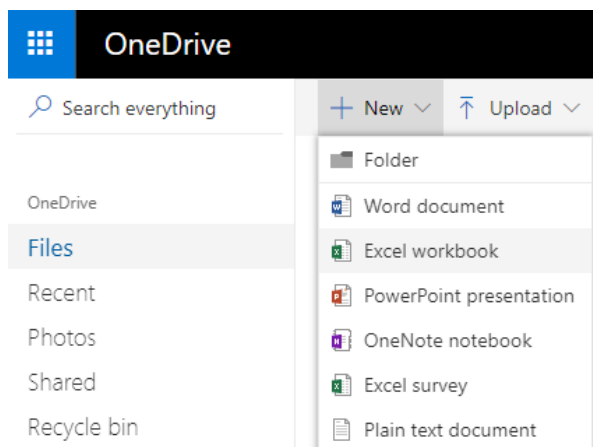
Step 8 - Power Off

Exit AP Mode and power off IoT button.

Click `Shutdown` button.

Step 9 - Create Excel table

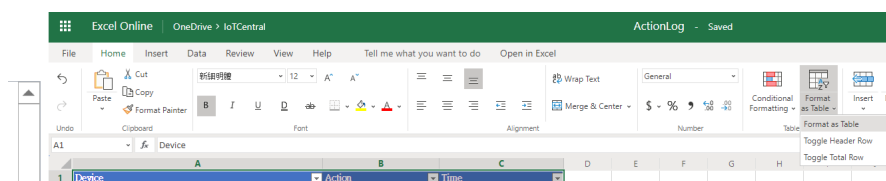
1. Go to [OneDrive](#) and create Excel workbook



2. Follow the column name below

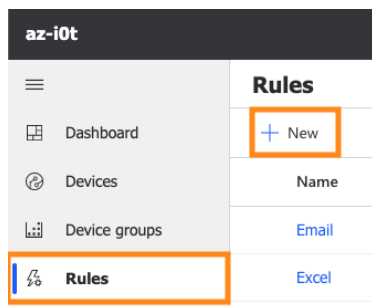
Device	Action	Time
--------	--------	------

3. Click **Format as Table**



Step 10 - Create event-based rule

1. Go back to IoT Application URL .
2. To add a new event-based rule to your application, in the left navigation menu, select "Rules" and click **+New** .



3. Give a name to this rule, "Device template" select **ReButton** . In "Conditions", "Telemetry" select **Message** , "Operator" choose **contains** and "Value" select **Any** . When every message appears will be triggering this rule to run.
4. Confirm the information and click **save** .

Save Cancel Rename

Rules > Excel

Excel

Enabled

Target devices

Select the device template your rule will use. If you need to narrow the rule's scope, add filters.

Device template *
ReButton

+ Filter

Conditions

Conditions define when your rule is triggered. Aggregation is optional—use it to cluster your data and trigger rules based on a time window.

Time aggregation
Off Select a time window

Telemetry * Operator * Value *
Message Contains Any

+ Condition

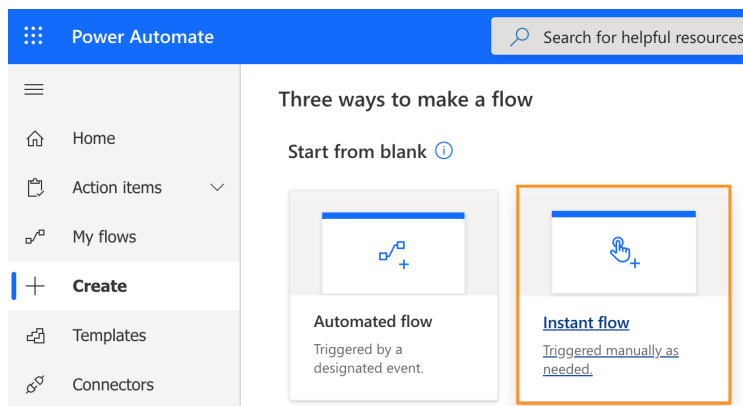
Actions

Choose what action your rule should take.

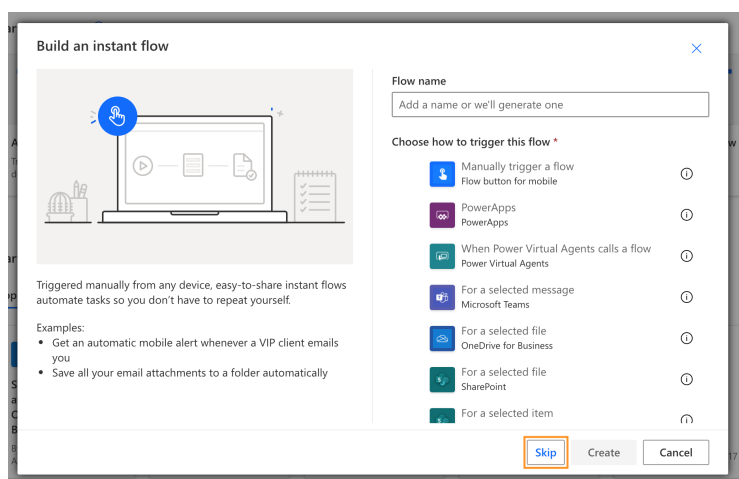
+ Email + Webhook + Azure Monitor Action Groups + Microsoft Power Automate + Microsoft Azure Logic Apps

Step 11 - Add Microsoft Power Automate as Action

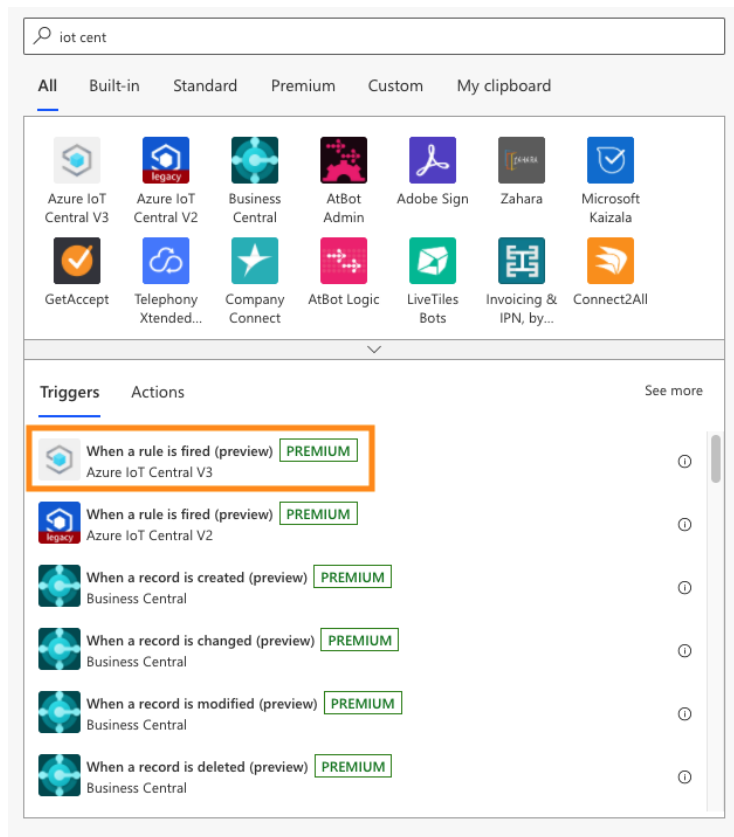
1. To create flow, in [Power Automate](#), goto "Create" and click [Instant flow](#).



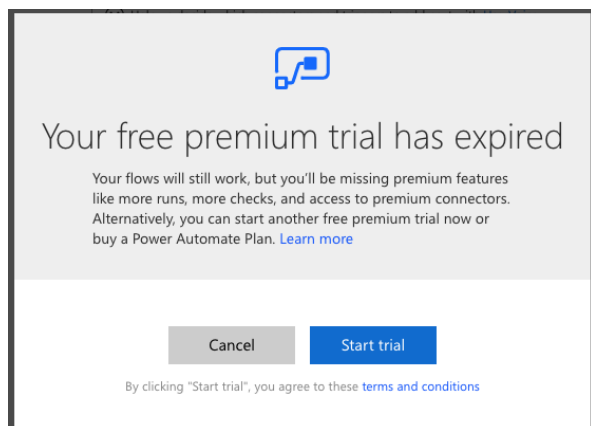
2. A "Build an instant flow" box will show, click [skip](#).



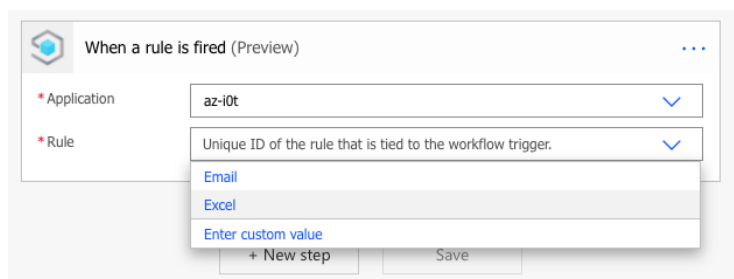
3. Choose, the trigger, in search bar, type [flow](#), select the trigger [Manually trigger a flow](#).
4. Search [IoT Central](#) and click [When a rule is fired](#). (Note: Choose "Azure IoT Central V3")



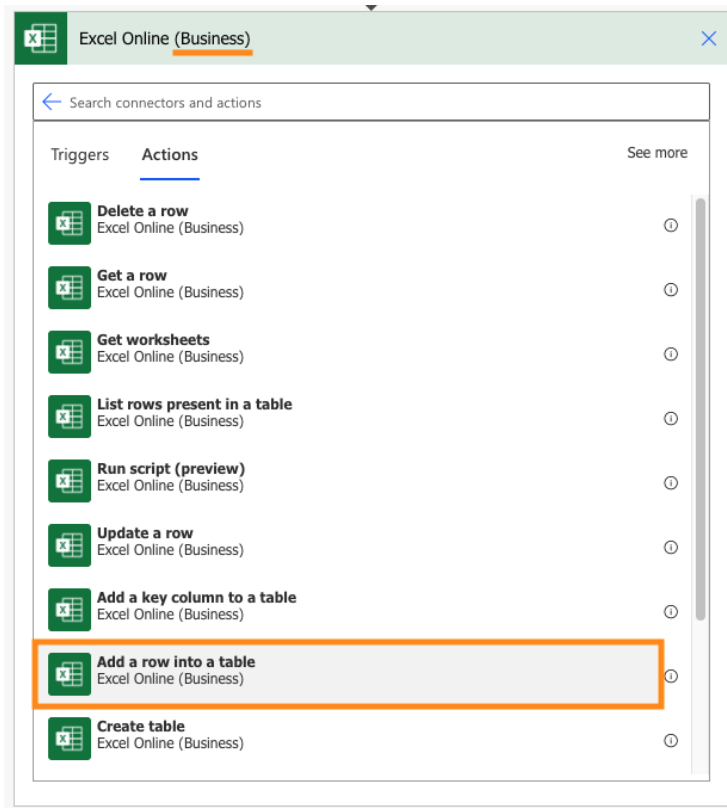
5. You may require to start the free trial, click `Start trial` and login with your `onmicrosoft.com` account.



6. Click the dropdown and select the `Application` and `Rule`



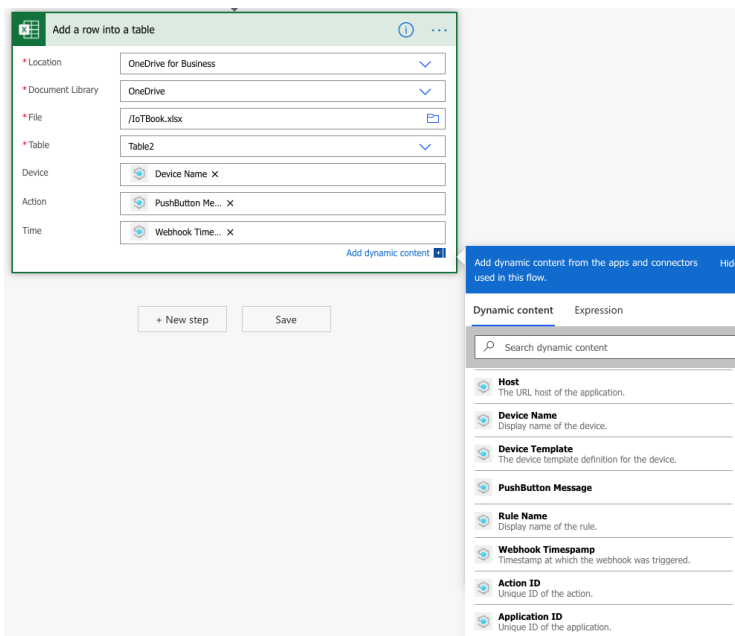
7. Click `+ New step` and search `Excel` . Select `Excel Online (Business)` , add an action `Add a row in a table` .



6. Fill in the information below:

- Device: Device Name
- Action: PushButton Message
- Time: Webhook Timespamp

You may find the information in "Dynamic content", the field under "When a rule is fired".



7. Click **save** on the top right corner and test your flow by pressing the ReButton.

	A	B	C	D
1	Device	Action	Time	
2	IoTButton	Single click	2020-09-04T13:27:32.683Z	
3	IoTButton	Triple click	2020-09-04T13:30:53.09Z	
4	IoTButton	Triple click	2020-09-04T13:31:52.401Z	
5	IoTButton	Long press	2020-09-04T13:32:43.244Z	
6	IoTButton	Super long press	2020-09-04T13:33:26.93Z	
7				
8				

