

- **Project Name : Gas Monitoring And Alerting System**
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## **CREAT THE IBM WATSON IOT PLATFORM AND A DEVICE:**

### **Creating device type:**

sensors with Watson IoT Platform. Each device that is connected to the IBM Watson IoT Platform must be associated with a device type. Device types are groups of devices that. Before you perform this task, you must have an IBM id so you can log in to Watson IoT Platform. You must determine which sensors are linked with which assets. You must register the

### **Procedure:**

- Watson IoT In Platform, go to the **Devices** menu and click the **Device Types** tab. Click **Add Device Type**.
- Enter a name and description for the device type and then click **Next**.
- Optionally enter more information about the device type and then click **Done**.
- Click **Register Devices** to register devices with this device type.
- Enter a device ID in the **Device ID** field and then click **Next**.

- Add information about the device and then click **Next**.

7. In the **Authentication Token** field, enter the Watson IoT Platform API token and then click **Next**.

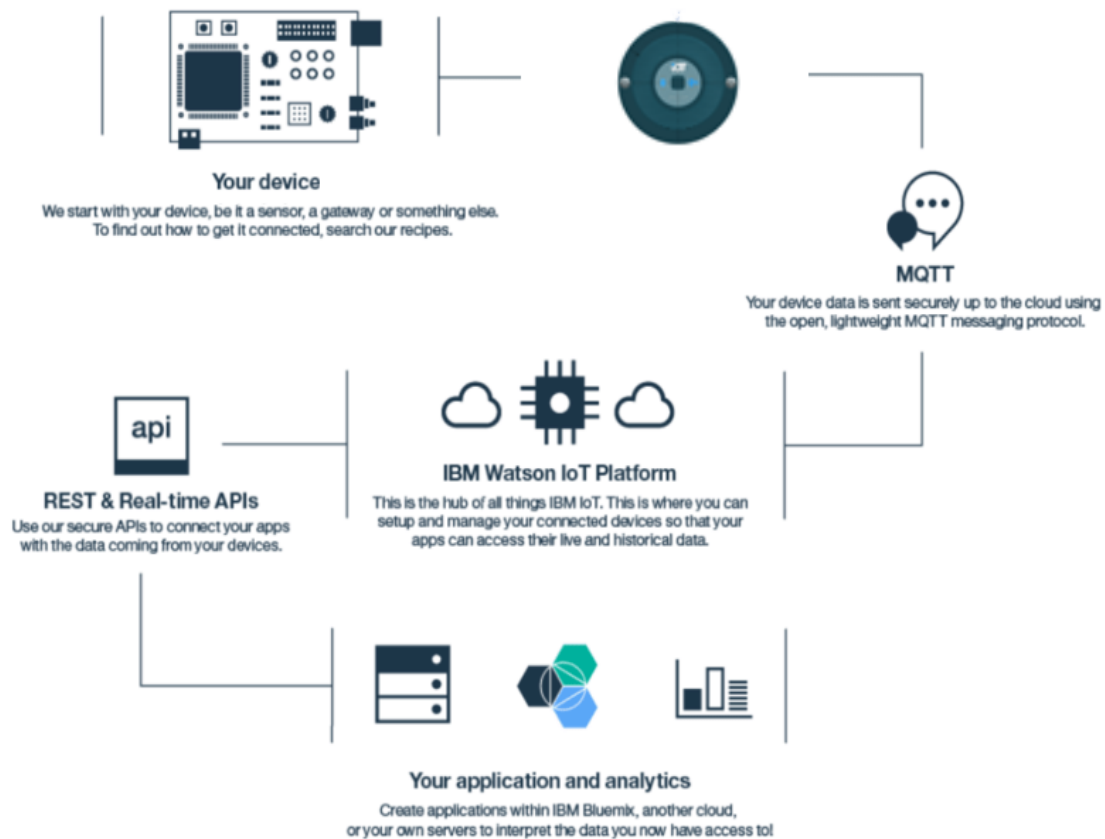
You can get the Watson IoT Platform API token from the Maximo APM - Predictive Maintenance Insights SaaS welcome letter.

8. Verify the information and then click **Done**.

## INTRODUCTION :

IoT platforms provide many integrated services and infrastructures like data storage, connectivity, display, control etc. Hence, they reduce the amount of investment required to deploy IoT solutions and this is one of the main reasons behind some of the most successful IoT solutions around. IBM Watson IoT platform is an industry grade IoT platform frequently used by big industries to store and analyze the data gathered from IoT devices.

Tap Link could be used as a facilitator for connecting your device to IBM Watson IoT Platform. In this tutorial we will setup an IBM Watson account, connect a Tap Link and connect IoT Studio to it.



Watson architecture:

Step1: Setup your IBM Watson IoT Platform account

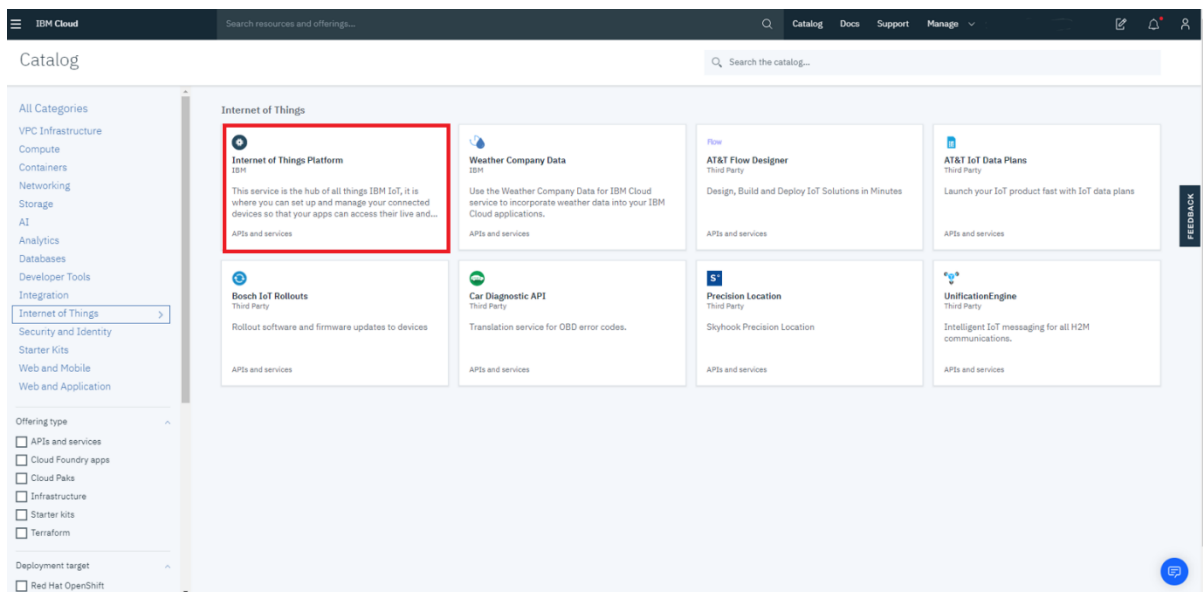
The first step is to create an **IBM Cloud** account: <https://cloud.ibm.com/>.

Then create an IBM Watson IoT Platform, by going to "**Create resource**" on the IBM Cloud Dashboard and selecting the **Internet of Things** platform.

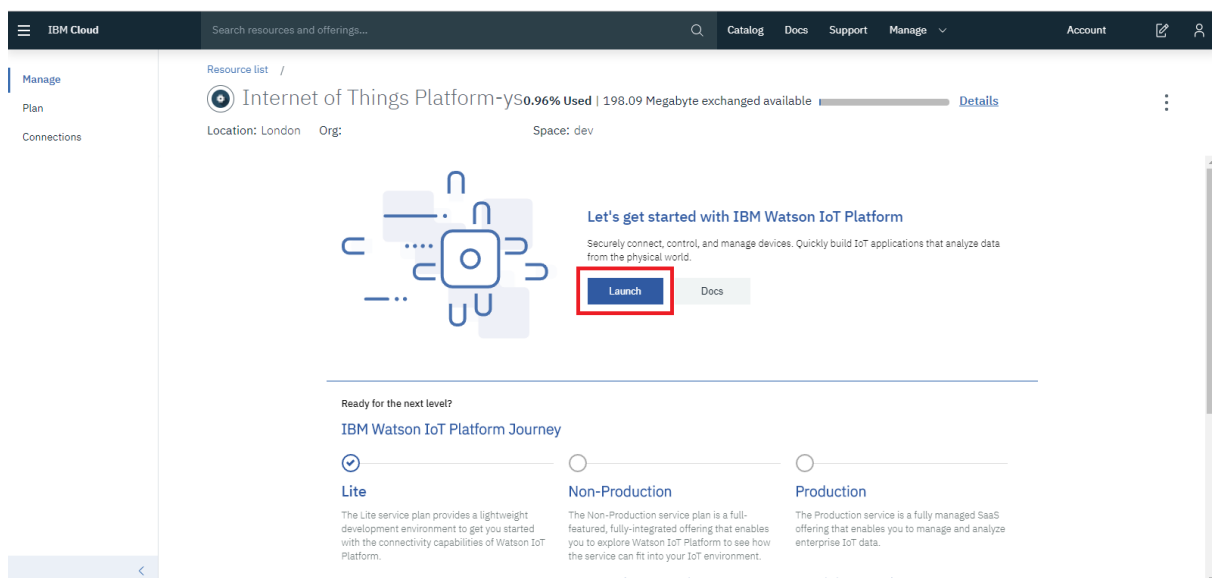
The screenshot shows the IBM Cloud Dashboard interface. At the top, there's a navigation bar with 'IBM Cloud', a search bar, and links to 'Catalog', 'Docs', 'Support', 'Manage', 'Account', and a user icon. Below the navigation bar, the 'Dashboard' title is visible, along with 'Upgrade account' and a highlighted 'Create resource' button. The main content area is divided into several sections:

- Resource summary:** A table listing resources like 'Cloud Foundry Apps' (1), 'Cloud Foundry Services' (2), and 'Services' (1). It includes a 'View resources' link and an 'Add more resources' button.
- Planned maintenance:** A section showing the next event on 'Mon, 20 May 2019 10:00' with a 'View events' link. It lists upcoming maintenance tasks for 'Perform Compose host main...'.
- Location status:** A table showing the status of various locations: 'Asia Pacific', 'Europe', 'North America', and 'South America', all with green checkmarks and a 'View status' link.
- Apps:** A section with a code icon and a message: 'You can view your apps here after you create them. Learn more about how to get started.'
- Support cases:** A section with a support icon and a message: 'You can view a summary of your support cases here after you submit them. Learn more about how to get support.'
- Usage:** A section with a bar chart icon and a message: 'There aren't enough resources or costs to make a chart.'
- Estimated total:** A section showing '\$0.00' with a note: 'This is not an invoice. Accuracy is not guaranteed.'

A vertical 'FEEDBACK' button is located on the right side of the dashboard.



- Once you have created the IoT resource, you can launch the [IBM Watson IoT Platform](#):



## Step2: Register your device on your IoT Platform

In this step we will create a device twin in Watson IoT Platform service that represents your physical device.

Watson IoT Platform service includes a **device twin** feature. This cloud-based digital representation of your device is connected to Watson IoT Platform service. Once it is defined and instantiated, the device twin provides a consistent means of interacting with your device from the IoT

hub.

- Within your IBM Watson IoT Platform, select **Devices** tab and click on **Add Device** button.

Step3: Configure Tap Link to handle IBM Watson connectivity

The STM32 Blue Pill board that is included in the Tap Link Primer Evaluation Kit is pre-programmed with the STM32\_Sensor application which demonstrates a few simple features like blinking the LED, measuring the internal temperature and voltage etc. In this guide, we will configure Tap Link to send some information to Watson IoT Platform.

Launch **IoTize Studio** and open **sensor demo. iot** config file installed in the **Sensors\_STM32\_Demo** subdirectory of the installed examples.

Select **IoT Platform (MQTT)** and setup the configuration:

- Set **Enable Relay** to **Yes**. *This allows the tap to use MQTT to receive LWM2M commands*
- Select **IBM Watson** in **IoT Platform**
- **Cloud Profile**: A specific profile to control access privileges of the connected 'IoT Platform'.
- **IBM Watson information**: Provide the previously created **Device Twin** information to enable TapNLink to connect directly to your Watson IoT Platform.
- **Organization ID**
- **Device Type**
- **Device ID**
- **Authentication Token**
- **IBM Watson messaging root certificate**: If you set up a Root CA to authenticate your devices, set it here. Leave it empty otherwise

IBM Watson IoT Platform

Browse Action Device Types Interfaces

**Add Device**

## Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator ☐ ☐ ☐

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By	Device Class
Items per page 50   1-1 of 1 items								

1 of 1 pages < 1 >

Cookie Preferences

Browse IBM Cloud Apps

**+ Generate API Key**

☐ Key  Description  Role  Expires

**API Key Information** Access Control/Permissions

Key	a-by0umx-cl1axln2g	Last Edited By	
Description	-	Expires	Never
Date Added	Nov 5, 2022 6:49 PM		
Last Update	Nov 5, 2022 6:49 PM		

☐ a-by0umx-kjy7i6qt1x API Key for the device simulator Standard Application -

1 Simulation running

IBM Watson IoT Platform

Browse IBM Cloud Apps

**+ Generate API Key**

☐ Key  Description  Role  Expires

2 results

<input type="checkbox"/>	a-by0umx-cl1axln2g	-	Standard Application	-	
<input checked="" type="checkbox"/>	a-by0umx-kjy7i6qt1x	API Key for the device simulator	Standard Application	-	

**API Key Information** Access Control/Permissions

Key	a-by0umx-kjy7i6qt1x	Last Edited By	-
Description	API Key for the device simulator	Expires	Never
Date Added	Nov 7, 2022 9:59 AM		
Last Update	Nov 7, 2022 9:59 AM		

1 Simulation running

