

Connecting Sensor Tag to IBM BlueMix

You need to sign up for a free trial from IBM BlueMix. The trial is for 30 days and does not require a credit card.

At your terminal use Git command to clone the repository.

Found here - <https://github.com/IBM-Bluemix/iot-sensor-tag>

```
git clone https://github.com/IBM-Bluemix/iot-sensor-tag
```

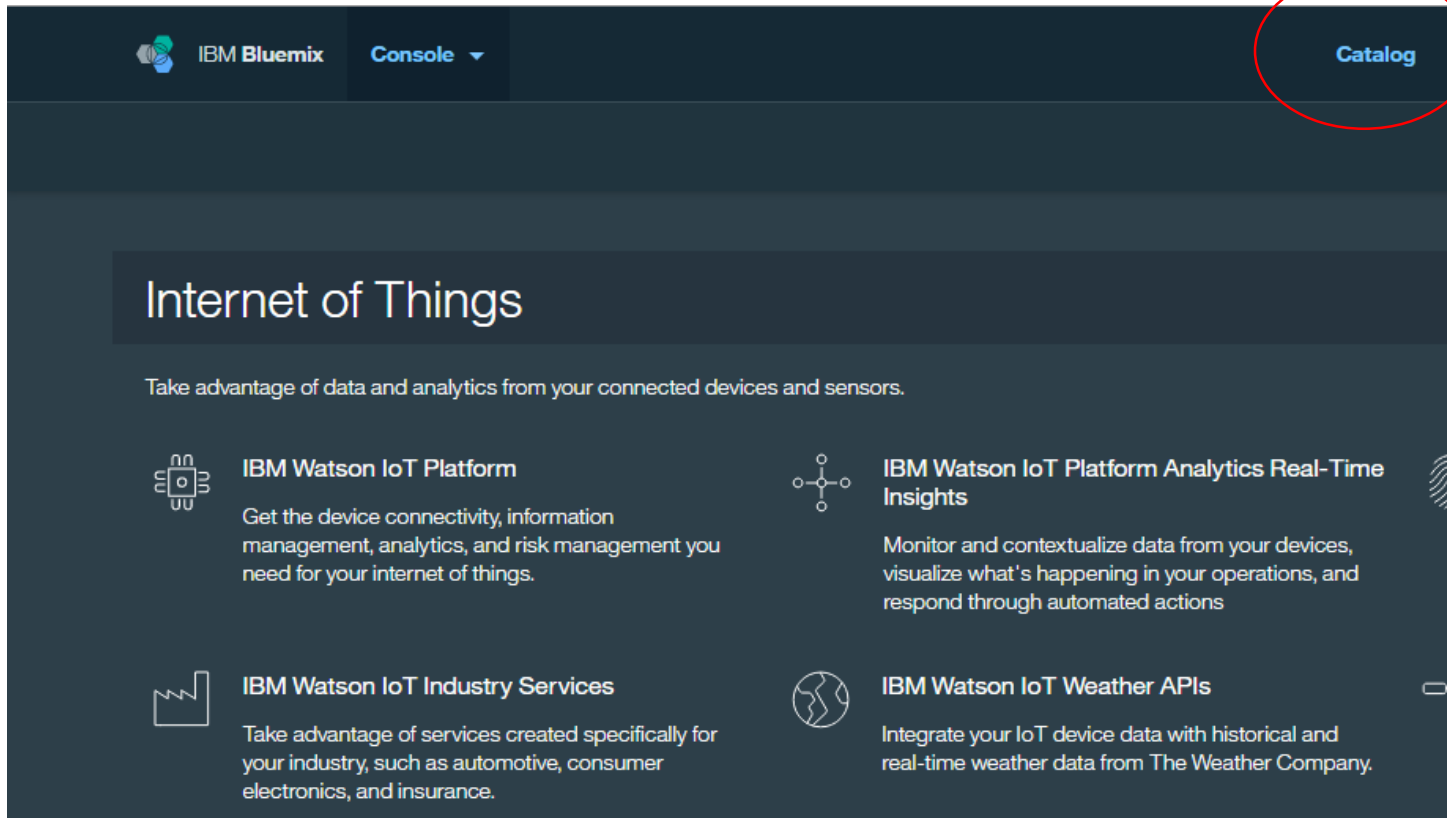
Move to the publish directory and execute the command `npm install` – You may see some warnings but as long as they are not errors it should be okay.

```
pi@raspberrypi: ~/iot-sensor-tag/publish
```

```
pi@raspberrypi:~ $ dir
Adafruit_Python_BNO055  Desktop      Downloads      iot-sensor
BlueMix.txt            Documents    iot_1.0-2_armhf.deb  Music
pi@raspberrypi:~ $ cd iot-sensor-tag
pi@raspberrypi:~/iot-sensor-tag $ dir
LICENSE  node-red  NOTICE  publish  README.md  subscribe
pi@raspberrypi:~/iot-sensor-tag $ cd publish
pi@raspberrypi:~/iot-sensor-tag/publish $ npm install
```

The following steps are to set up BlueMix and the Raspbery Pi:

Step 1 Console for IBM. Click on Catalog.



Step 2 Select Internet of Things on the left. Now select Internet of Things Platform

The screenshot shows the IBM Bluemix console interface. At the top left, the 'IBM Bluemix' logo and 'Console' dropdown are visible. A search bar is located at the top right. On the left sidebar, the 'Internet of Things' category is highlighted with a red circle and a blue selection box. The main content area displays a grid of services. The 'Internet of Things Platform' service is highlighted with a red circle. Below it, the 'IoT for Electronics' service is also visible. To the right, 'Context Mapping' and 'flowthings.io' services are partially visible.

IBM Bluemix Console

All Categories

Boilerplates

Compute

Network

Storage

Data & Analytics

Watson

Internet of Things >

APIs

DevOps

Security

Search

Internet of Things Platform
This service is the hub of all things IBM IoT, it is where you can set up and
IBM

IoT for Electronics
This service is a component of the IoT for Electronics solution and should
IBM

Context Mapping
IBM Watson IoT Context Mapping Service brings the power of
IBM

flowthings.io
agile intelligence for IoT
Third Party


Step 3 Under Connect your device – click on Launch dashboard

The screenshot shows the IBM Bluemix Internet of Things dashboard. At the top, there is a dark navigation bar with the IBM Bluemix logo, the text 'Internet of Things' with a dropdown arrow, and links for 'Catalog' and 'Docs'. A white box in the top right corner contains the number '26'. The main content area has a white background with a dark header that reads 'Hi! Welcome to the Watson IoT Platform' and a sub-header 'Take a look at the steps below to get you going with your Internet of Things app'. Below this are three columns of content. The first column is titled 'Connect your devices' and features a gear icon. It contains text about using recipes and a paragraph that says 'Launch the Watson IoT Platform dashboard and add your devices by clicking the 'Add Device' button under the 'Devices' tab.' Below this text is a button labeled 'Launch dashboard', which is circled in red. The second column is titled 'Learn how to build your app' and features a document icon. It contains text about building apps with real-time and historical data and a paragraph about reading docs. Below this is a button labeled 'Go to docs'. The third column is titled 'Learn how to extend your app' and features a person icon. It contains text about extending apps with other Bluemix services and a list of services: Twilio (Third Party), Cloudant NoSQL DB (IBM), and Dash DB (IBM). Each service is represented by its logo and name.

IBM Bluemix Internet of Things Catalog Docs 26

Hi! Welcome to the Watson IoT Platform

Take a look at the steps below to get you going with your Internet of Things app




Connect your devices

Use our [recipes](#) to find out how to add your devices. We work with partners and have sample connection recipes for many devices.

Launch the Watson IoT Platform dashboard and add your devices by clicking the 'Add Device' button under the 'Devices' tab.

[Launch dashboard](#)




Learn how to build your app

When you have added your devices, you can come back to Bluemix to start building your app using your real-time and historical device data.

Read the docs to find out how to make the most out of your app.




[Go to docs](#)



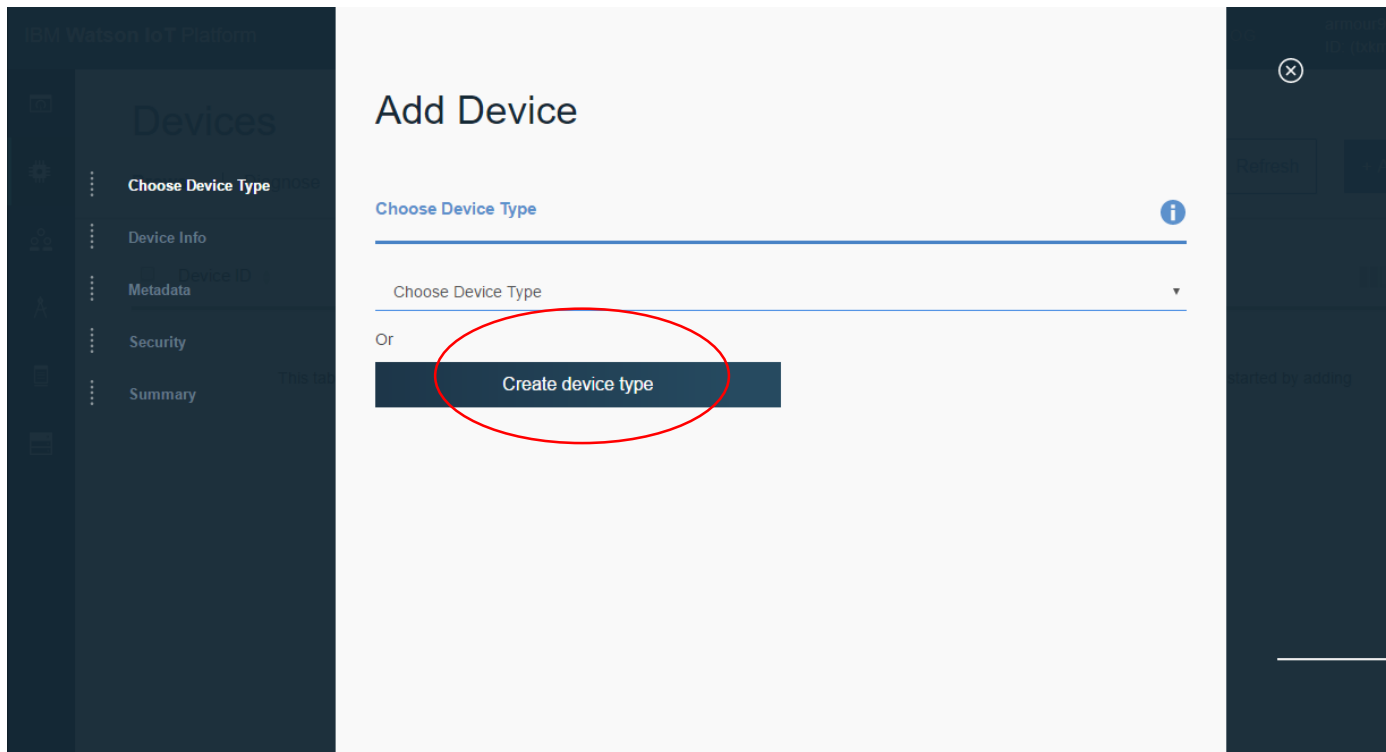
Learn how to extend your app

Use other Bluemix services to extend your app to start creating a great Internet of Things app.

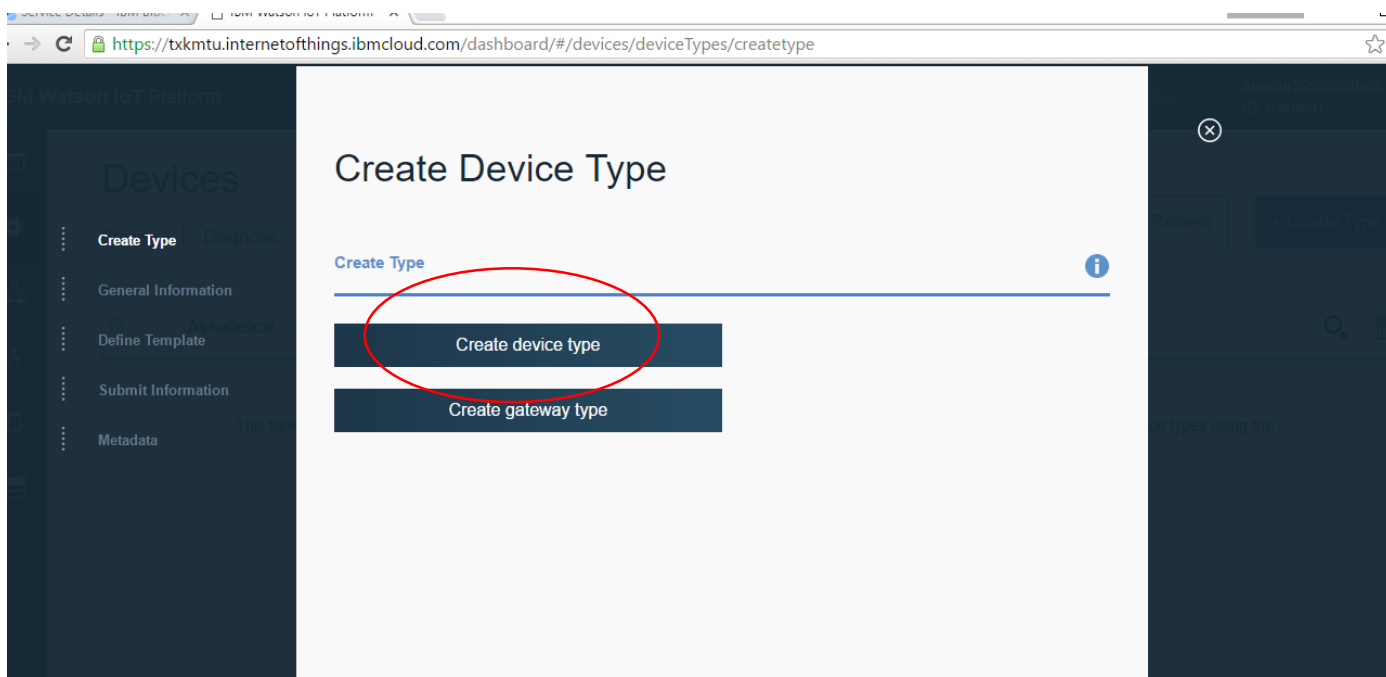
Here are some of the services you could use:

-  Twilio
Third Party
-  Cloudant NoSQL DB
IBM
-  Dash DB
IBM

Step 4 Select Create Device Type



Step 5 Select Create device type:



Step 6 Name your Device. Add the MAC address for the Pi. The MAC address can be found using ifconfig at the command line. All other fields are not mandatory

IBM Watson IoT Platform

Devices

- ✓ Choose Device Type
- ✓ Device Info
- ✓ Metadata
- ✓ Security
- **Summary**

Add Device

Summary

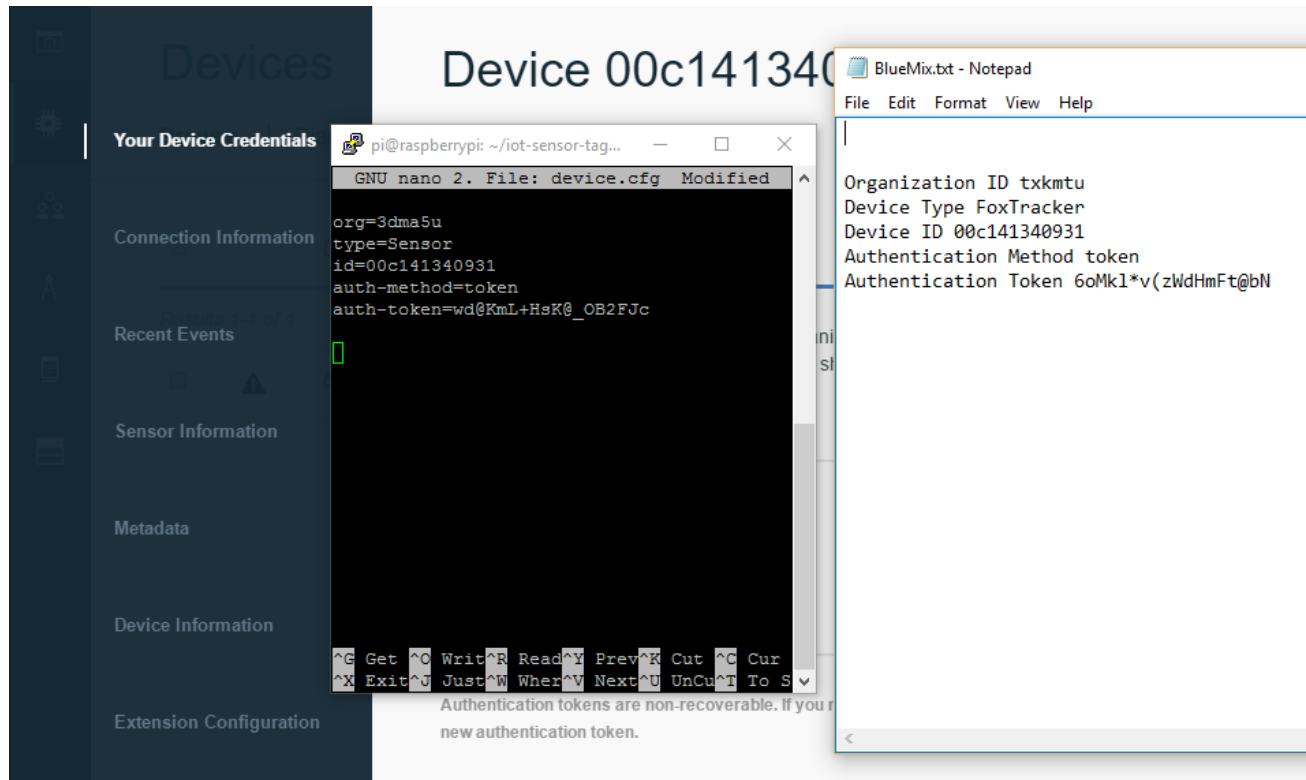
Please check that all submitted information for this device is correct before adding this device.

Device Type	FoxTracker
Device ID	00c141340931
Serial Number	-
Manufacturer	-
Model	-
Class	-
Description	-
Firmware Version	-
Hardware Version	-
Descriptive Location	-

Step 7 Generate Credentials

During the setup you have to create a config.properties to store you credentials generated by Bluemix. My credentials have changed so I'm not concerned about showing them. The device.cfg shows one set of credentials modified to work in the program. If you view his video the syntax has changed to the example in Notepad. Use `sudo nano` within the publish directory to copy your credentials to that was generated by Bluemix.

```
sudo nano config.properties
```



The screenshot displays the Bluemix IoT console interface for a device named "Device 00c141340". The left sidebar shows navigation options: "Your Device Credentials", "Connection Information", "Recent Events", "Sensor Information", "Metadata", "Device Information", and "Extension Configuration". The main content area shows the "Your Device Credentials" section with the following details:

- Organization ID txkmtu
- Device Type FoxTracker
- Device ID 00c141340931
- Authentication Method token
- Authentication Token 6oMk1*v(zWdHmFt@bN

Overlaid on the console is a terminal window running GNU nano 2.0, editing a file named "device.cfg". The contents of the file are:

```
org=3dma5u
type=Sensor
id=00c141340931
auth-method=token
auth-token=wd@KmL+HsK@_OB2FJc
```

Below the nano editor, a warning message is visible: "Authentication tokens are non-recoverable. If you need a new authentication token."

Overlaid on the right side of the terminal is a Notepad window titled "BlueMix.txt - Notepad". The contents of the Notepad file are:

```
Organization ID txkmtu
Device Type FoxTracker
Device ID 00c141340931
Authentication Method token
Authentication Token 6oMk1*v(zWdHmFt@bN
```

Step 8 Test the Connection in Putty and BlueMix:

Run this in the command line:

```
Node sensor-tag.js
```

Make sure your sensor tag is connected and you should see this in Putty.

```
pi@raspberrypi: ~/iot-sensor-tag/publish
login as: pi
pi@192.168.1.116's password:

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Aug 10 21:17:25 2016
pi@raspberrypi:~ $ dir
Adafruit_Python_BNO055  Music                Public
Desktop                node_latest_armhf.deb python_games
Documents              openxc-0.13.0        Templates
Downloads              openxc-0.13.0.tar.gz Videos
iot_1.0-2_armhf.deb    openxc-python
iot-sensor-tag         Pictures

pi@raspberrypi:~ $ cd iot-sensor-tag
pi@raspberrypi:~/iot-sensor-tag $ cd publish
pi@raspberrypi:~/iot-sensor-tag/publish $ dir
config.properties      device.cfg           package.json         sensor-tag.js
config.properties.save node_modules         README.md

pi@raspberrypi:~/iot-sensor-tag/publish $ sudo nano device.cfg
pi@raspberrypi:~/iot-sensor-tag/publish $ node sensor-tag.js
Device MAC Address: 00c141340931
Make sure the Sensor Tag is on!
MQTT client connected to IBM IoT Cloud.
Discovered device with UUID: a0e6f8b67f84
Connected To Sensor Tag
█
```




Devices

[Browse](#) | [Diagnose](#) | [Action](#) | [Device Types](#) | [Manage Schemas](#)

Refresh

<input type="checkbox"/>	Device ID ↕	Device Type ↕	Class ID ↕	Date Added	Location ↕
--------------------------	-------------	---------------	------------	------------	------------

Results 1-1 of 1

<input type="checkbox"/>	 00c141340931	FoxTracker	Device	Aug 11, 2016 6:12:53 AM	
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Sensor Information

Event	Datapoint	Value
air	d.myName	TI Sensor Tag
air	d.pressure	1015.64
air	d.humidity	89.9658203125
air	d.objTemp	18.53125
air	d.ambientTemp	25.34375
air	d.temp	25.42999267578125
air	d.lux	35.83

Metadata

Brenda Armour

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