Node Location Solution Kit With Actility V1.0

Content

1. Overview

This document describes how to connect to the LoRaWAN server Actility using Actility gateways with RAK811 BreakBoard.

(The RAK811 TrackerBoard and RAK811 SensorNodeBoard are the same except GPS. Hereinafter referred to as BreakBoard)

Including the following：

How to register Actility account ?

How to register Actility gateway in Actility ?

How to Add RAK811 BreakBoard Device to Actility Application Server ?

How to register myDevices account ?

How to import RAK811 BreakBoard data into Cayenne ?

How to view data on phone via Cayenne APP ?

So let's get started！

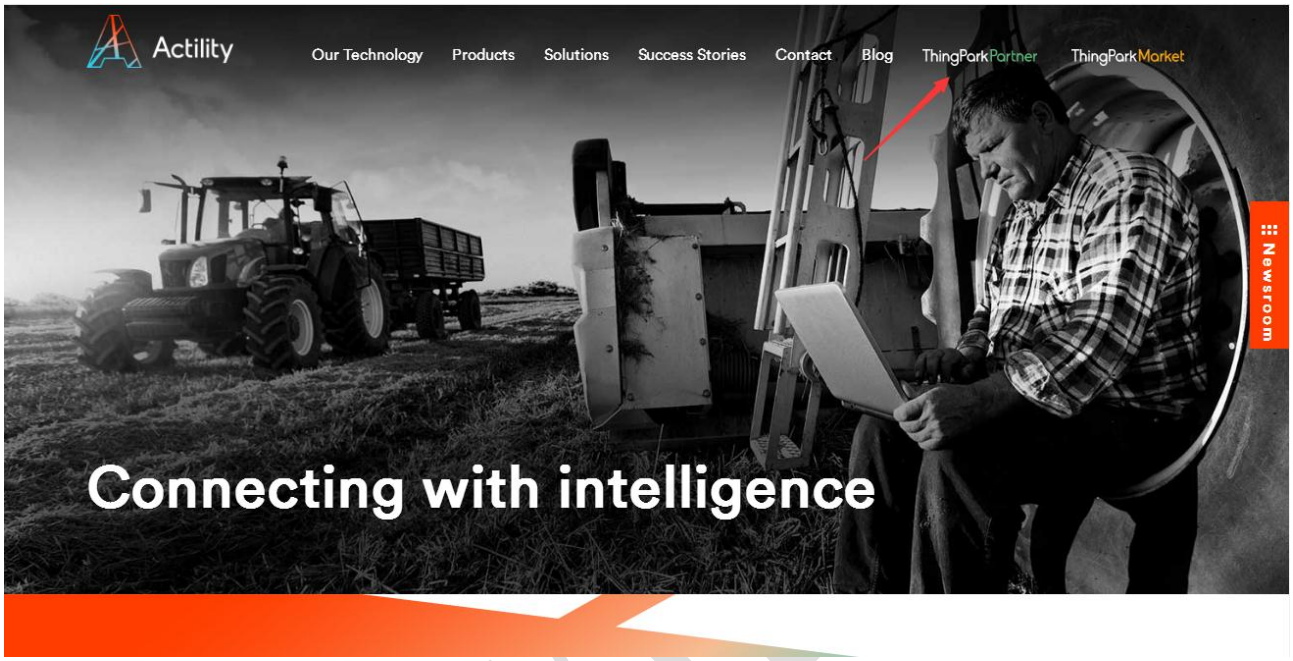
2. Start Using

2.1 Register Actility

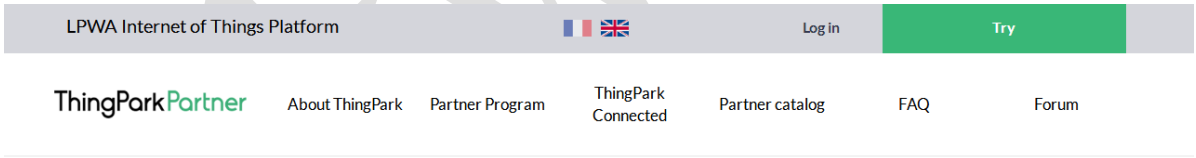
Actility is the leader in LoRaWAN network solutions. Actility's ThingPark is an advanced IoT enabler platform for the deployment, management and monetisation of LPWA networks.

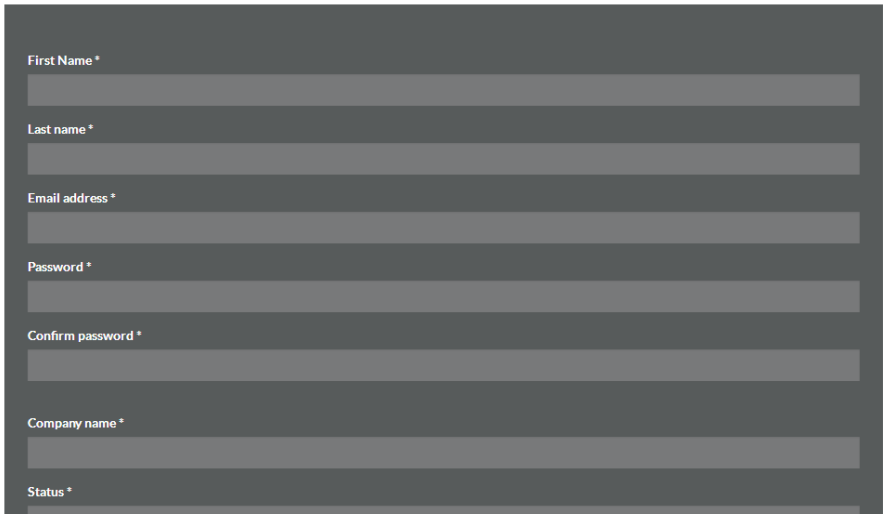
First let's open Actility's home page: https://www.actility.com/

Then click the place pointed by the arrow. Enter ThingParkPartner.



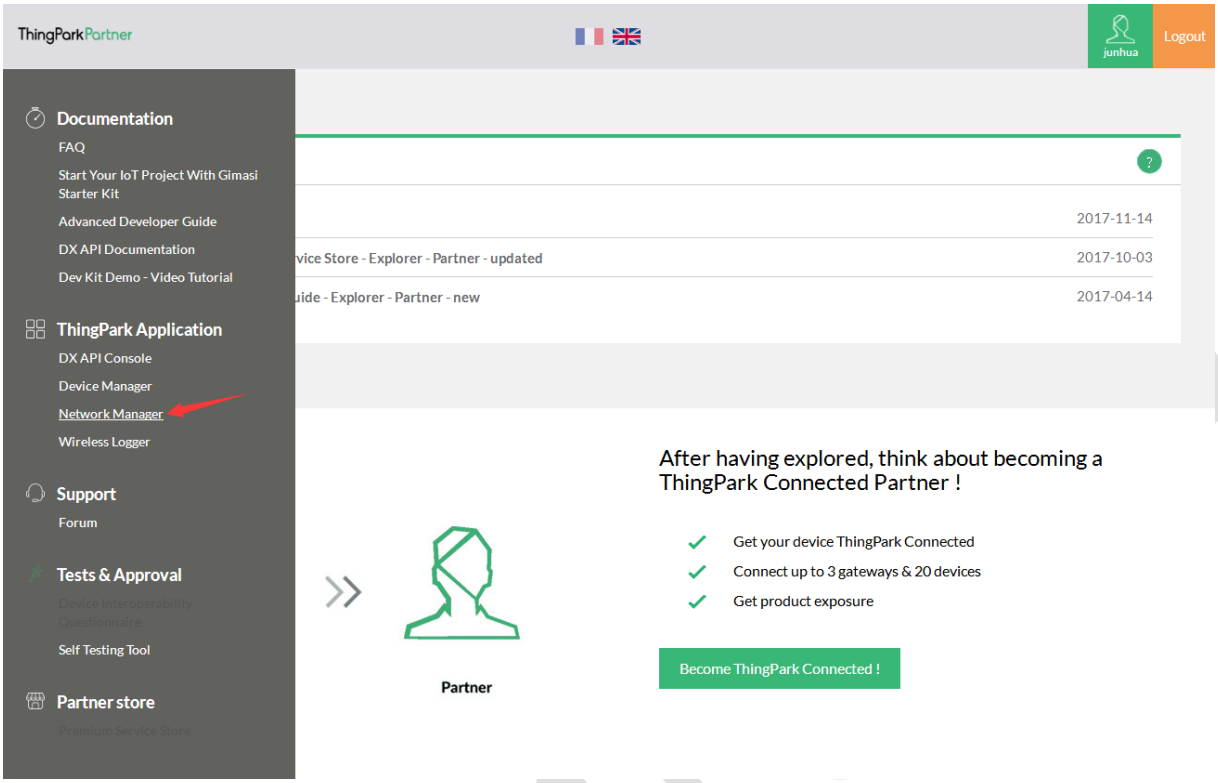
After entering the ThingParkPartner, click Try in the upper right to enter the registration interface. After filling out the information you can use Actility.



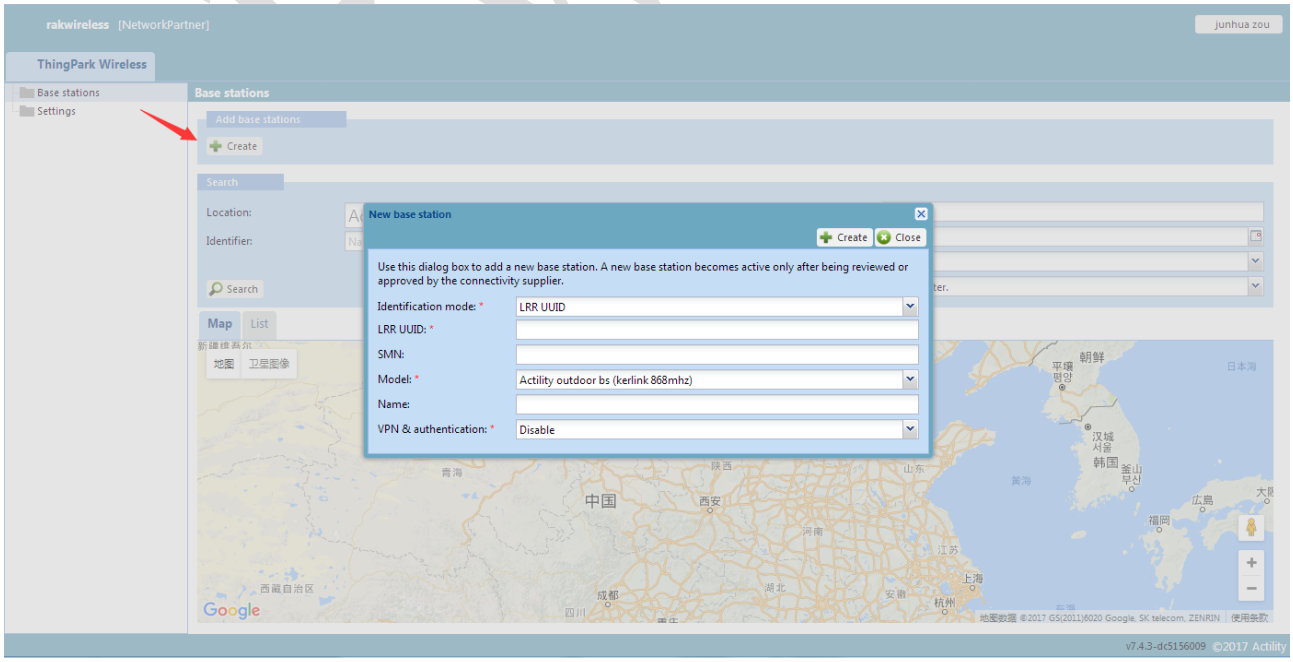


2.2 Register Gateway to Actility

After registering your Actility account, you will be logged in to your dashboard. Click the “Network Manager” button on the left to enter Actility's Management Gateway interface.



In Actility's Management Gateway interface, you can see that there is a Create button, click to add a gateway device.



Select the LRR ID in the Identification mode field. You will see that you need to type in four messages: LRR ID, SMN, Model, Name. they mean is as follows:

LRR ID: Identification of the base station -> Enter the last BS ID 8 hexadecimal digits (Must)

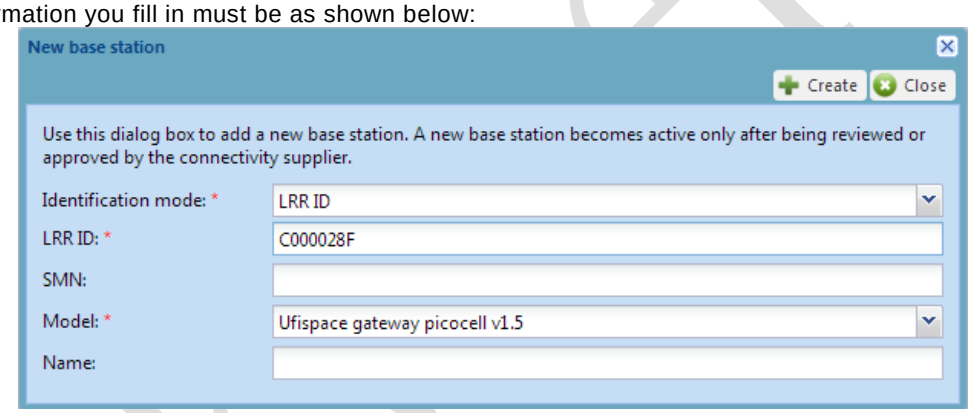
Model : Gateway model -> Select the proper one (Must)

SMN: Serial Number -> Enter 0000-XX-0000-0000 as SMN (do not copy and paste from here, please enter it manually) (Optional)

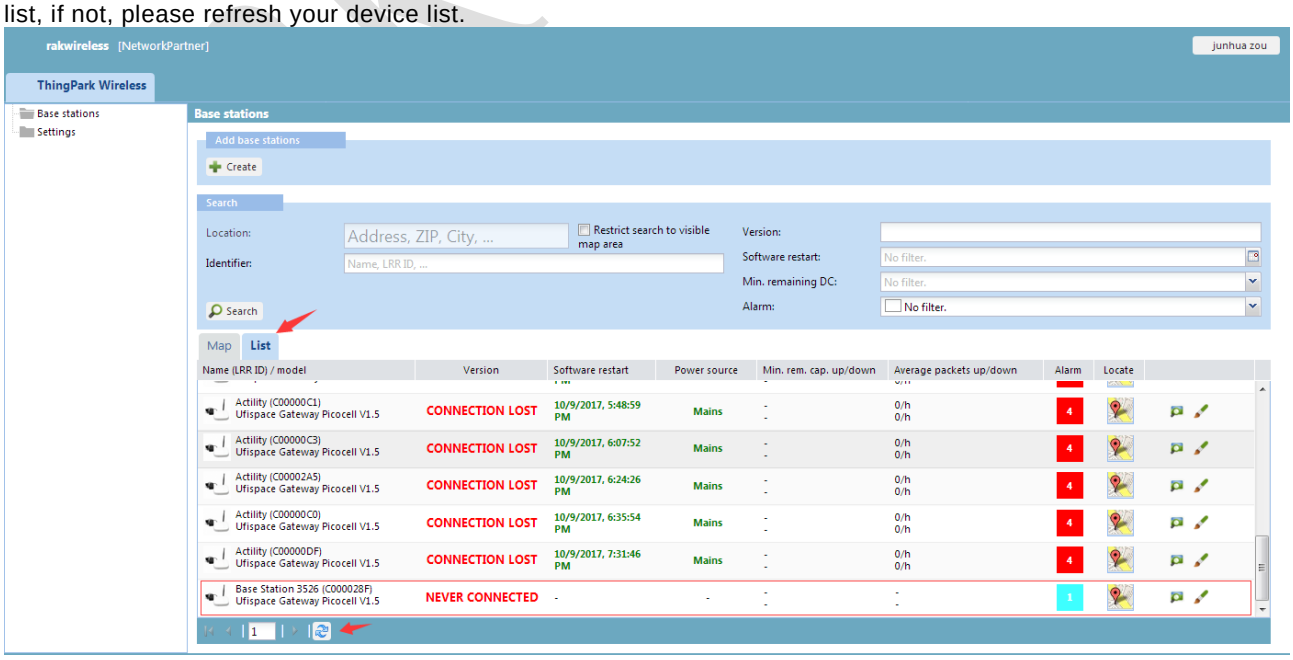
Name : name of your Basestation -> Enter a name (Optional)

The information you need can be found at the bottom of your gateway device. The BS ID here stands for LRR ID. Model is the device type corresponding to the gateway. In this case, Ufispace gateway picocell v1.5

The information you fill in must be as shown below:

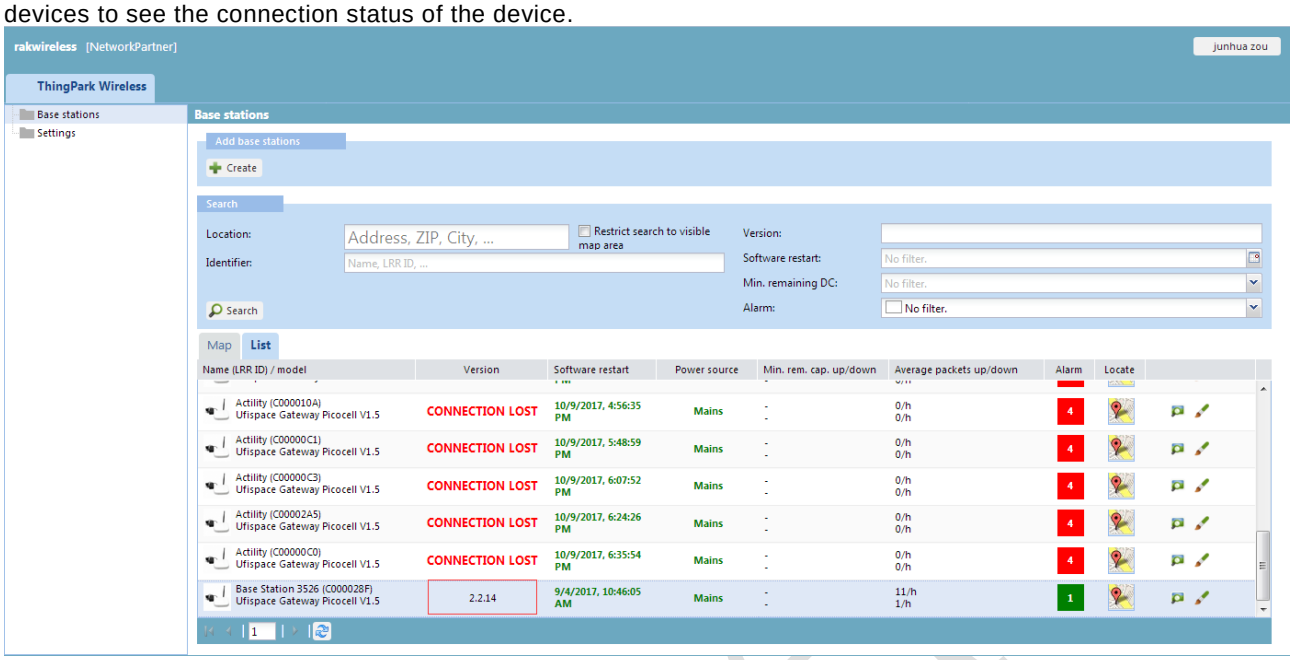


Finally, click the Create button to create the device, after the success you can see your device in your device list, if not, please refresh your device list.



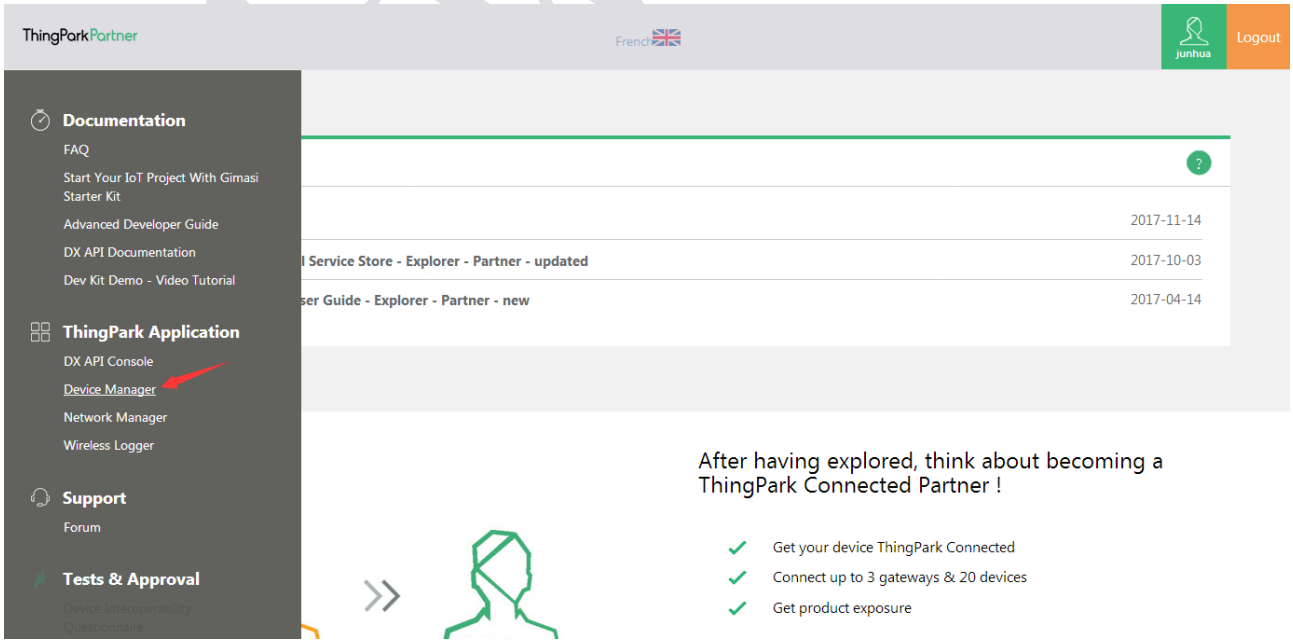
Power up your gateway device at this time. Be sure to connect your gateway device to a networked environment(connected to the WLAN port). For how to configure the gateway device, please refer to the gateway device manual: Picocell_User Manual_GPE810-20170524_V0.1.

After power-up, your device automatically connects to the Actility network. You only need to refresh your list of devices to see the connection status of the device.

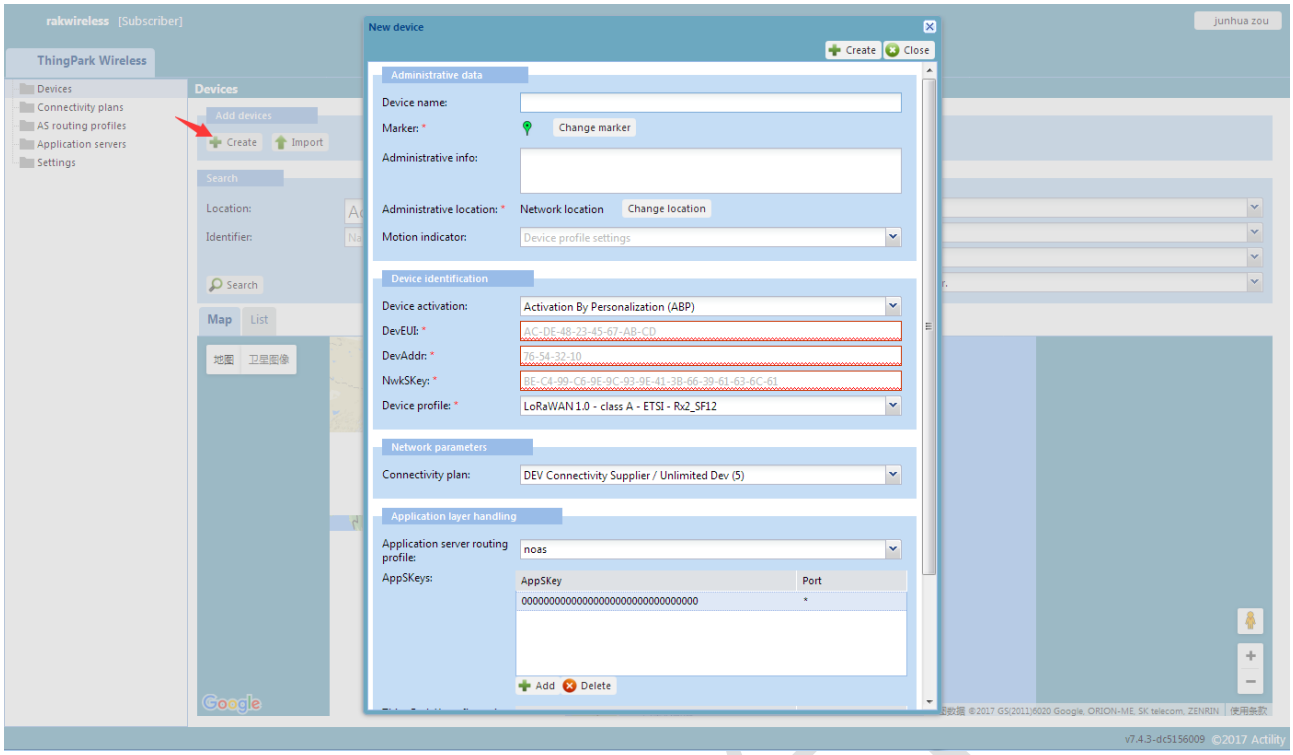


2.3 Register your device to Actility

Return to the dashboard interface of your Acceleration account, Click the Device Manager button to enter the device management interface.



After entering the device management interface, click the Create button to create the device.



The parameters of these devices, you can see the following introduction:

Device name: This is the device name ,you can set any name. Recommended setting: Device model_The last three EUIs. Eg: RAK811_BreakBoard_0000AA.

Marker: Default setting.

Administrative info: Do not set.

Administrative location: Default setting.

Motion indicator: Do not set.

Device activation: Set to OTAA or ABP mode. Take OTAA for example.

DecEUI: The DevEUI is a unique device 64-bits identifier. This parameter can be set arbitrarily.(Please remember these parameters, the back of the device will be used)

AppEUI: The AppEUI/joinEUI is the identifier of the joinServer, it is provided by the operator. This parameter can be set arbitrarily.(Please remember these parameters, the back of the device will be used)

AppKey: The AppKey authenticates the joinRequest, it is generated randomly by the device manufacturer. This parameter can be set arbitrarily.(Please remember these parameters, the back of the device will be used)

Device profile: Select LoRaWAN 1.0.2 revA - class A - ETSI - Rx2_SF12 Settings.

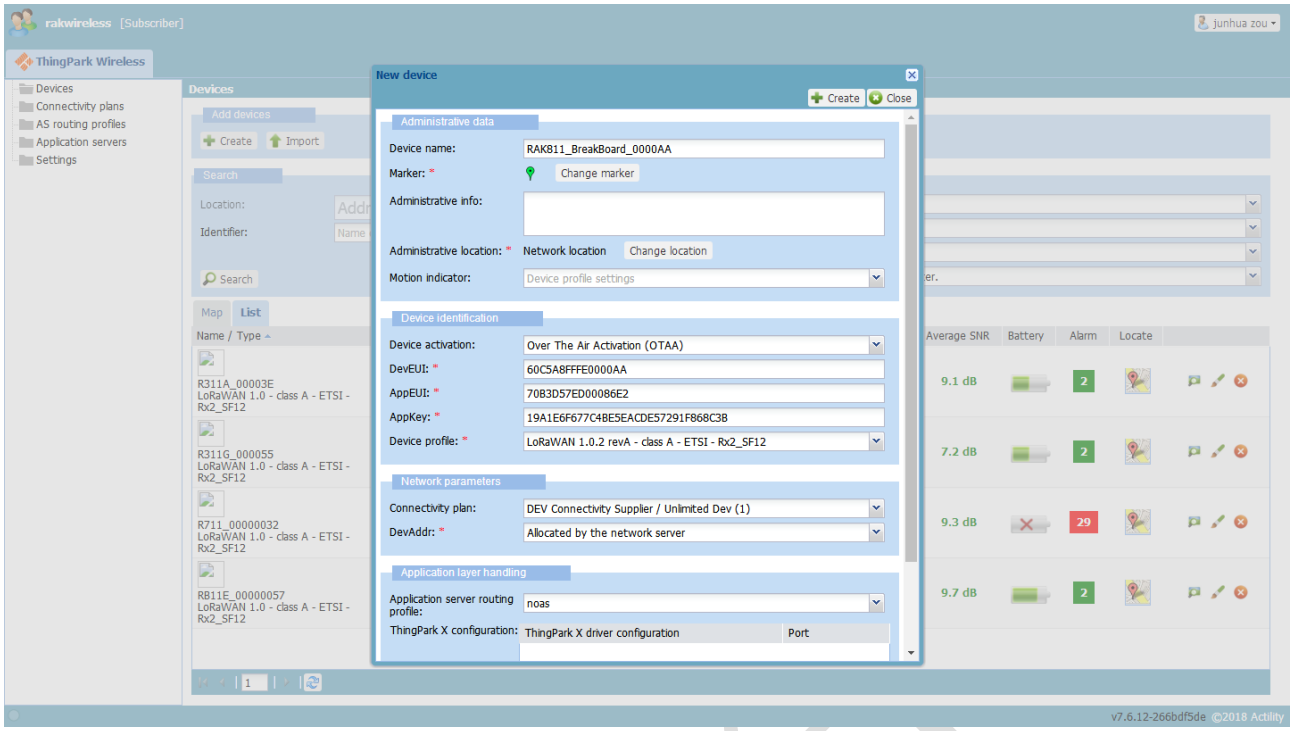
Connectivity plan: Select DEV Connectivity Supplier / Unlimited Dev (?) Settings.

DevAddr:Select Allocated by the network server Settings.

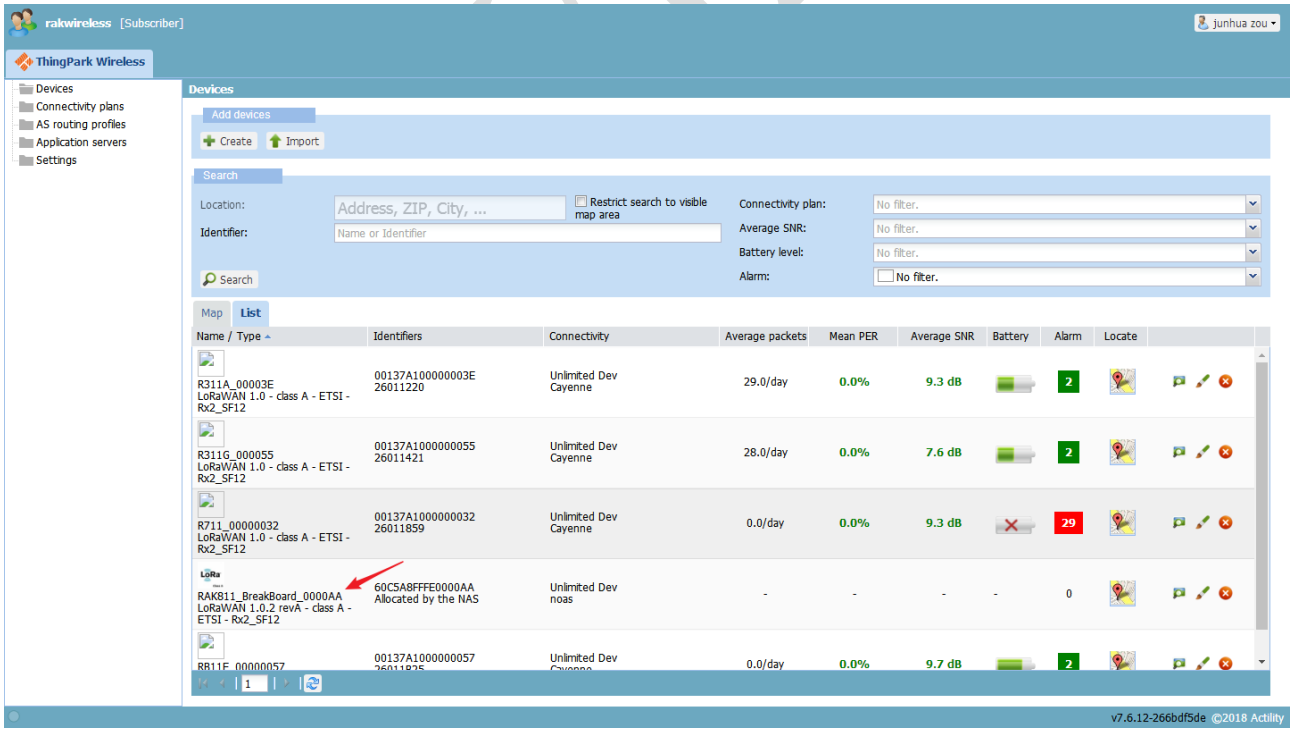
Application server routing profile: Select noas Setting, there will be settings later.

ThingPark X configuration: Do not set.

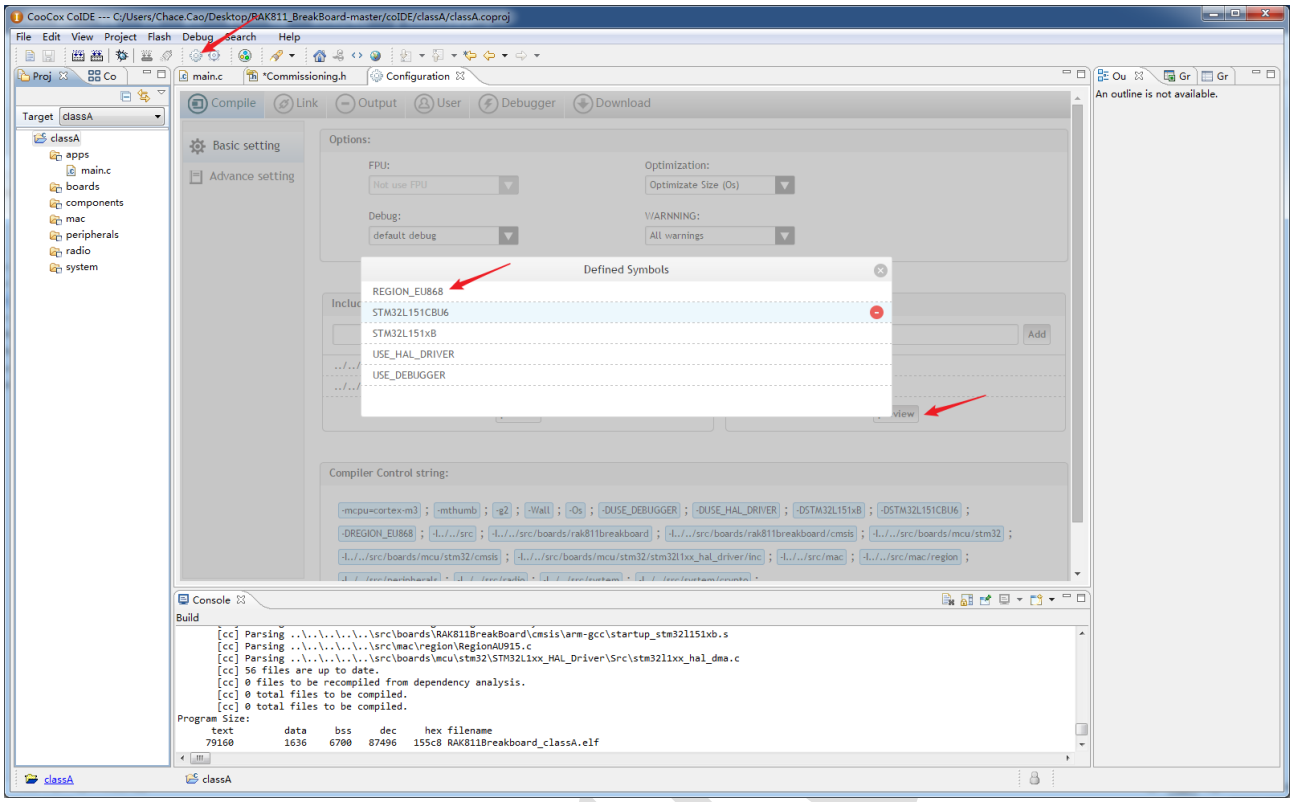
Finally, the information you set must be as shown below:



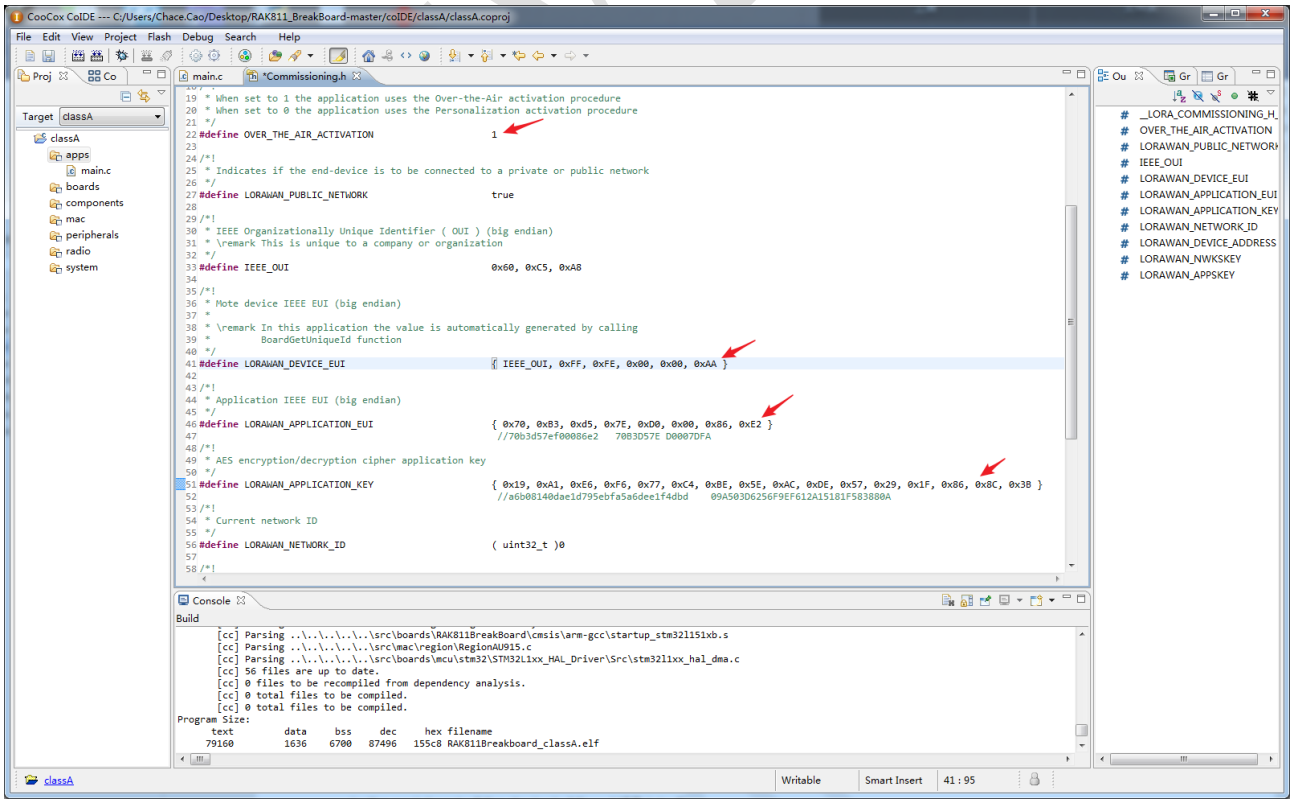
After setting the parameters, click the “Create” button on the top right to create the device, After the creation is successful, you will see the device you created in your device list, if not, please refresh your list.



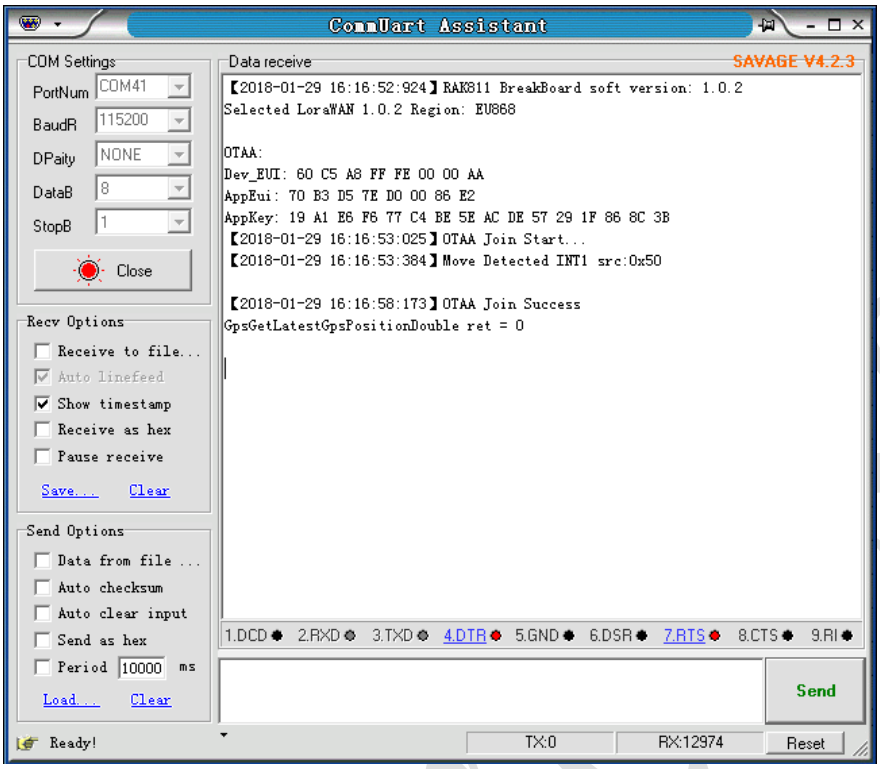
After registering the device in the Actility interface, then you need to modify the parameters of the device. Open the RAK811_BreakBoard open source project. Modify the region.



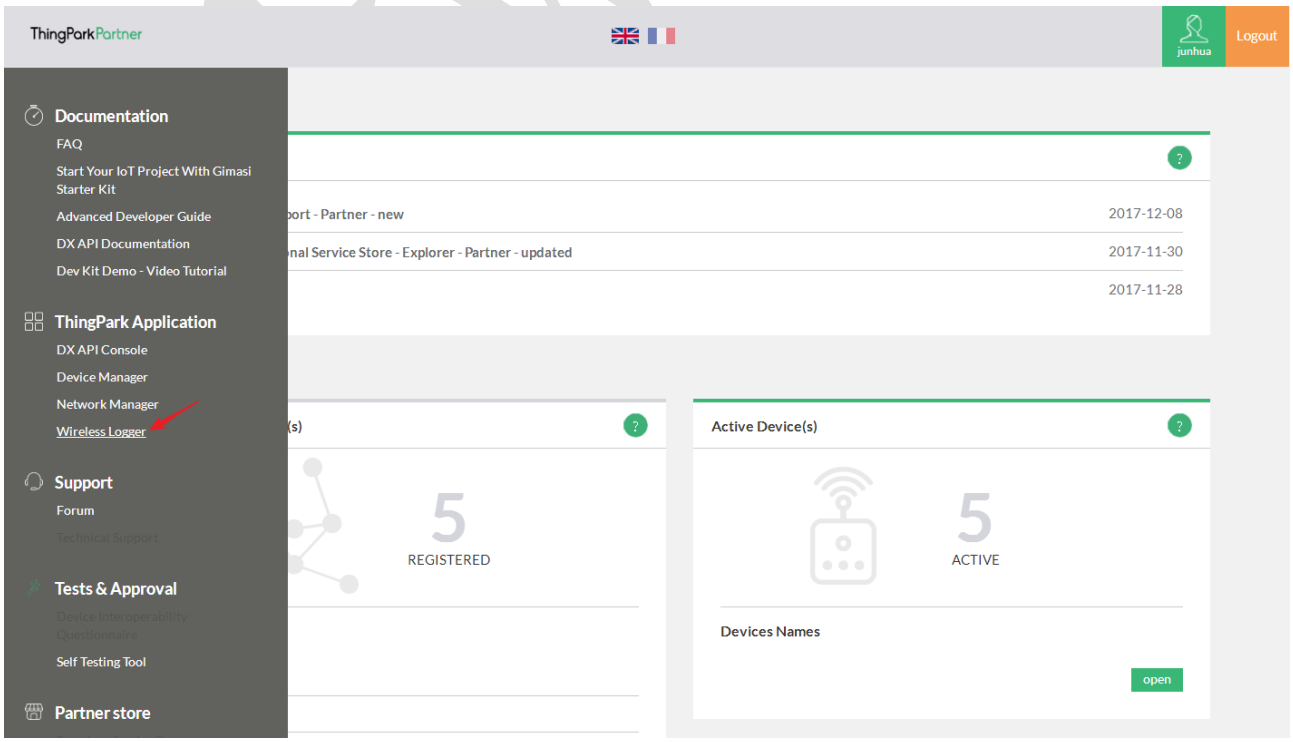
Then modify the parameters, modify the join method for OTAA, and modify the OTAA method is required for three parameters Device EUI, App EUI and App key(The three parameters are the three parameters set before). At last compile the download process.

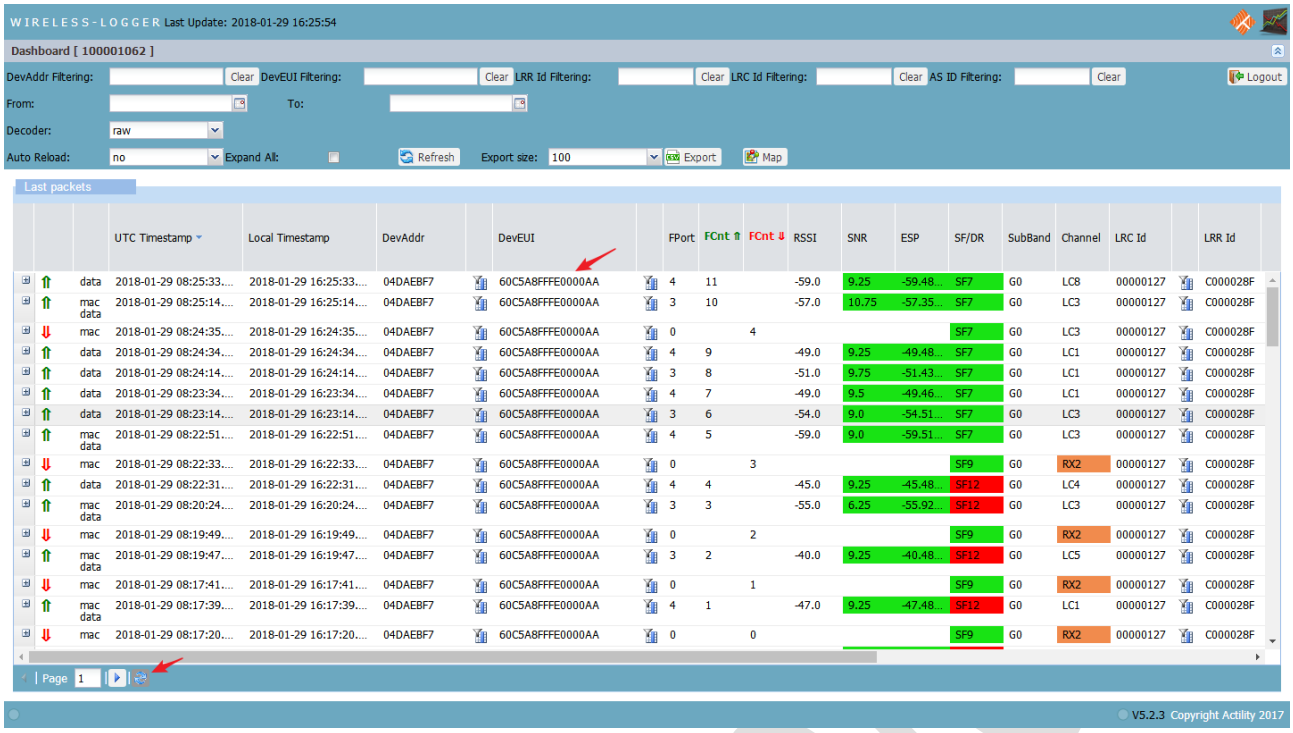


After the program download is complete, reset the RAK811 BreakBoard device, you can see the following information in the serial port of the device's Micro USB interface.



In your Actility dashboard, click "Wireless Logger" and you will see the data sent to the gateway by the device.(If you do not see, please refresh the list)



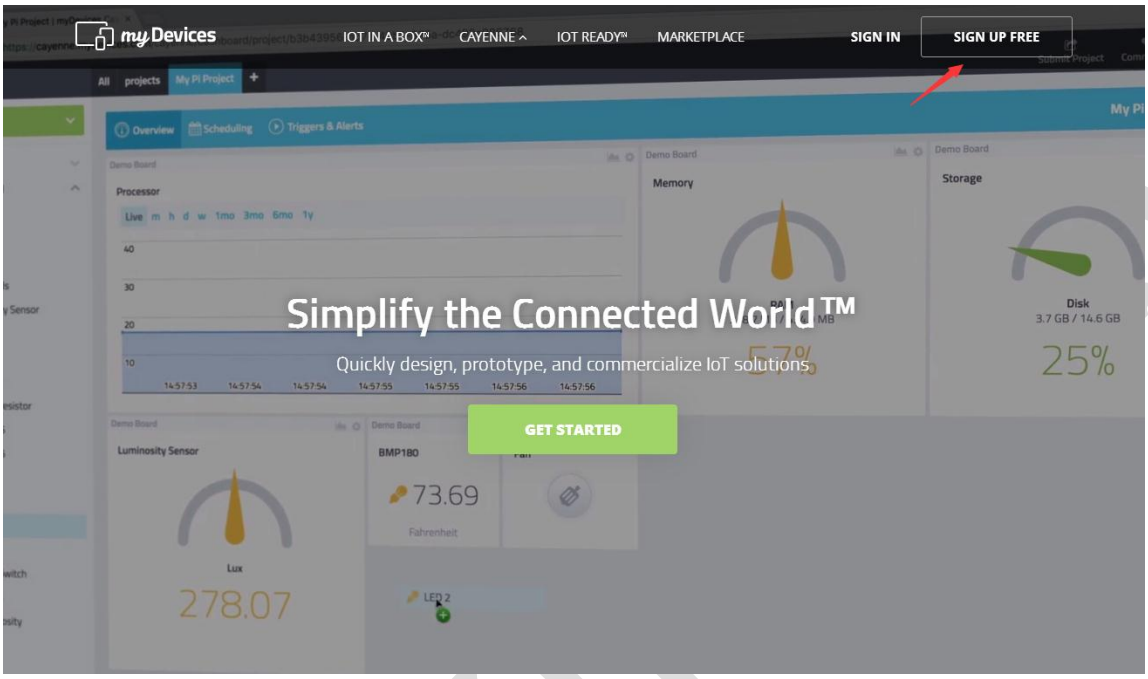


2.4 Register myDevices

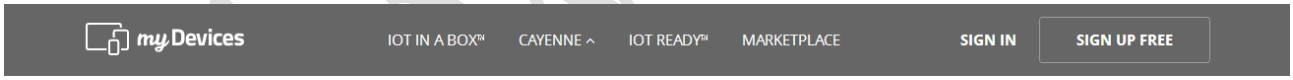
myDevices is an Internet of Things solutions company. They created Cayenne – the world's first drag-and drop IoT project builder. Cayenne enables engineers, makers, network operators and system integrators to quickly and easily develop and deploy IoT solutions across a wide variety of verticals.

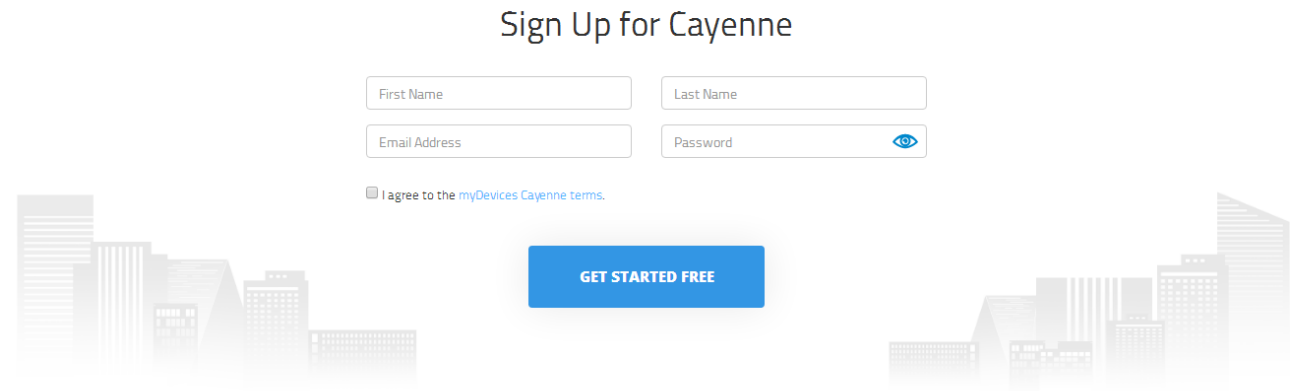
First let's open myDevices home page: https://mydevices.com/

Then click the SIGN UP FREE button at the top right to start registering.



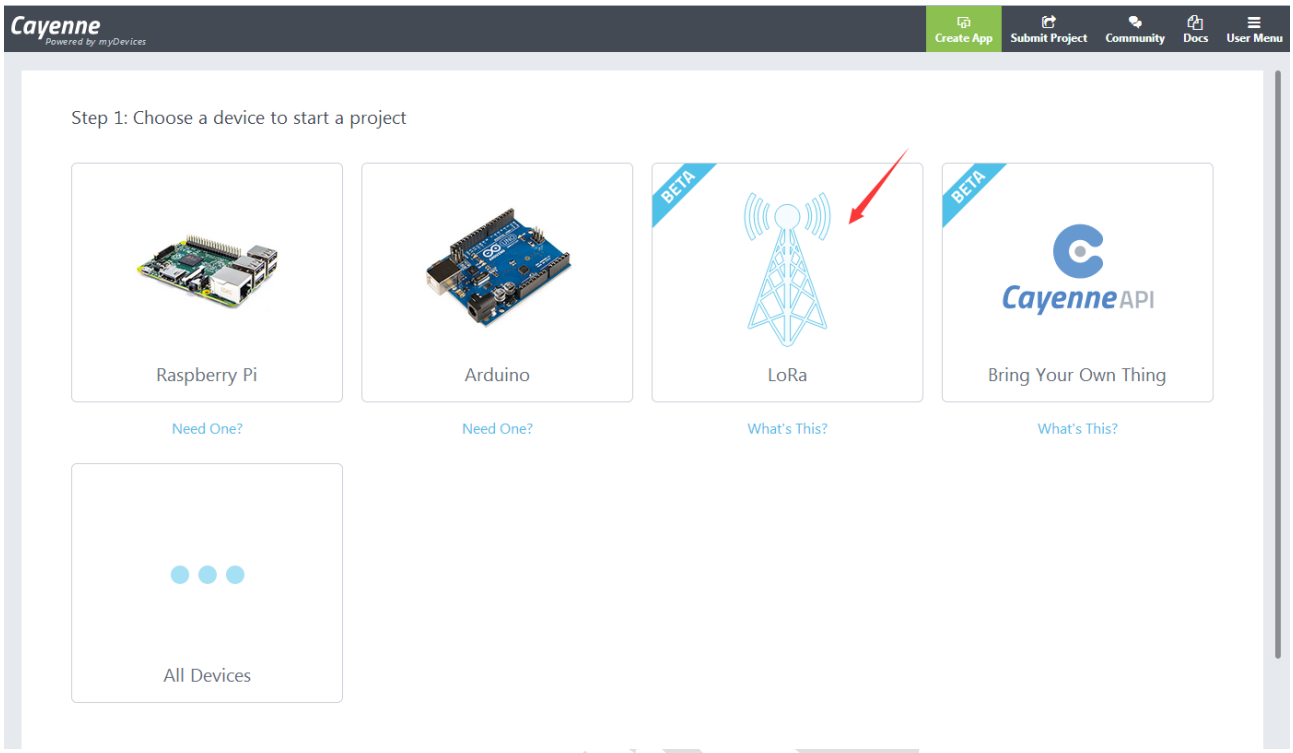
In accordance with the requirements, fill in the information, you can create a myDevices account.



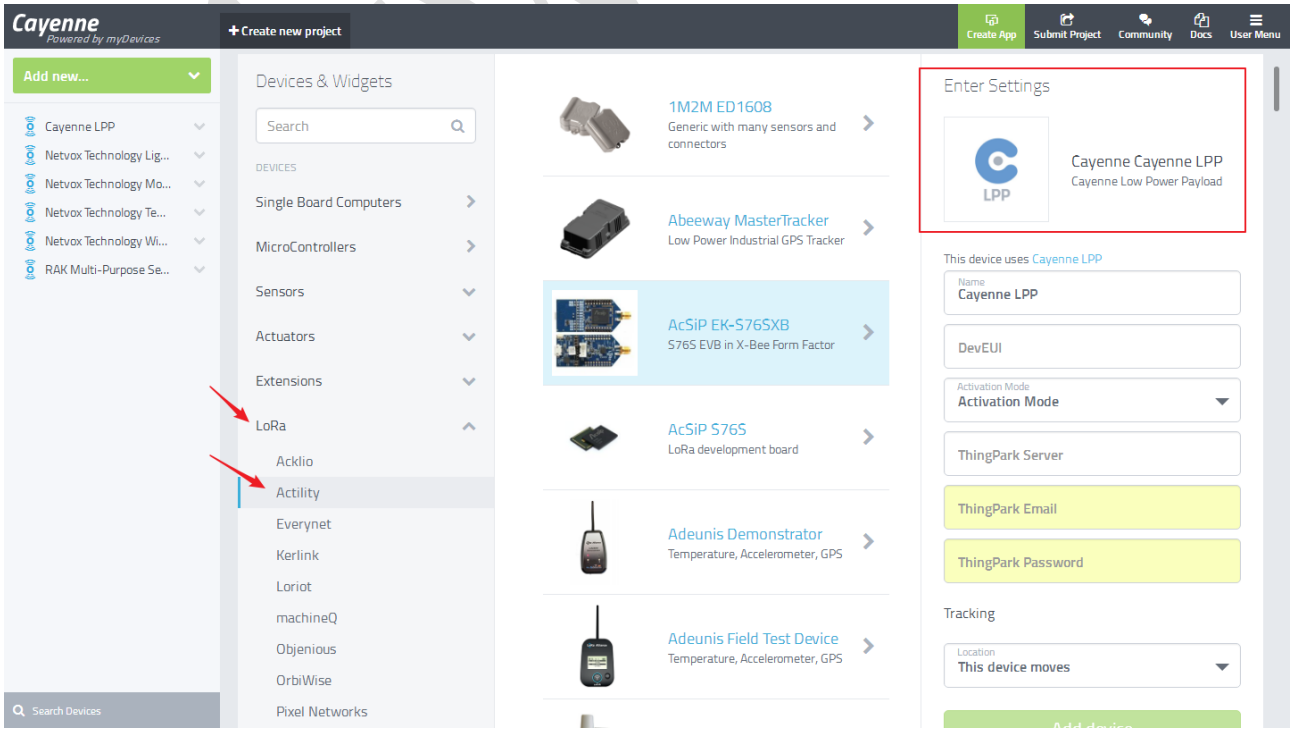


2.5 Export the data to Cayenne

After registering myDevices account, log in to your account and you will see your Cayenne Dashboard. Since the device we want to add is a LoRa device, select the LoRa icon Click.



After entering, first select the left LoRaWAN network provider, here select Actility. Next, select the sensor device, so choose the device: Cayenne LPP.



You can see the need to fill in some of the parameters of the device, described in detail below：

Name: You can set the name as you like.

DevEUI: The DevEUI is a unique device 64-bits identifier. This parameter can be acquire in TTN.

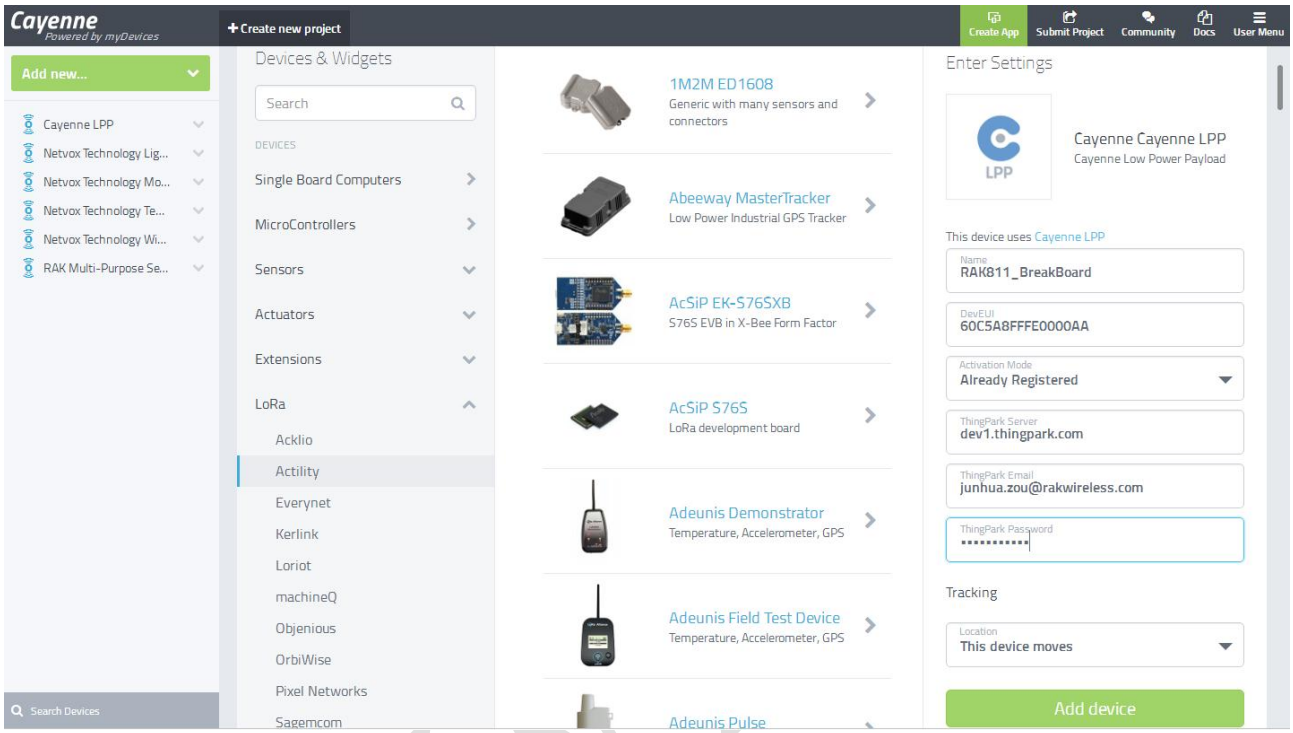
Activation Mode: The Default setting Already Registered.

ThingPark Sever: Set to dev1.thingpark.com.

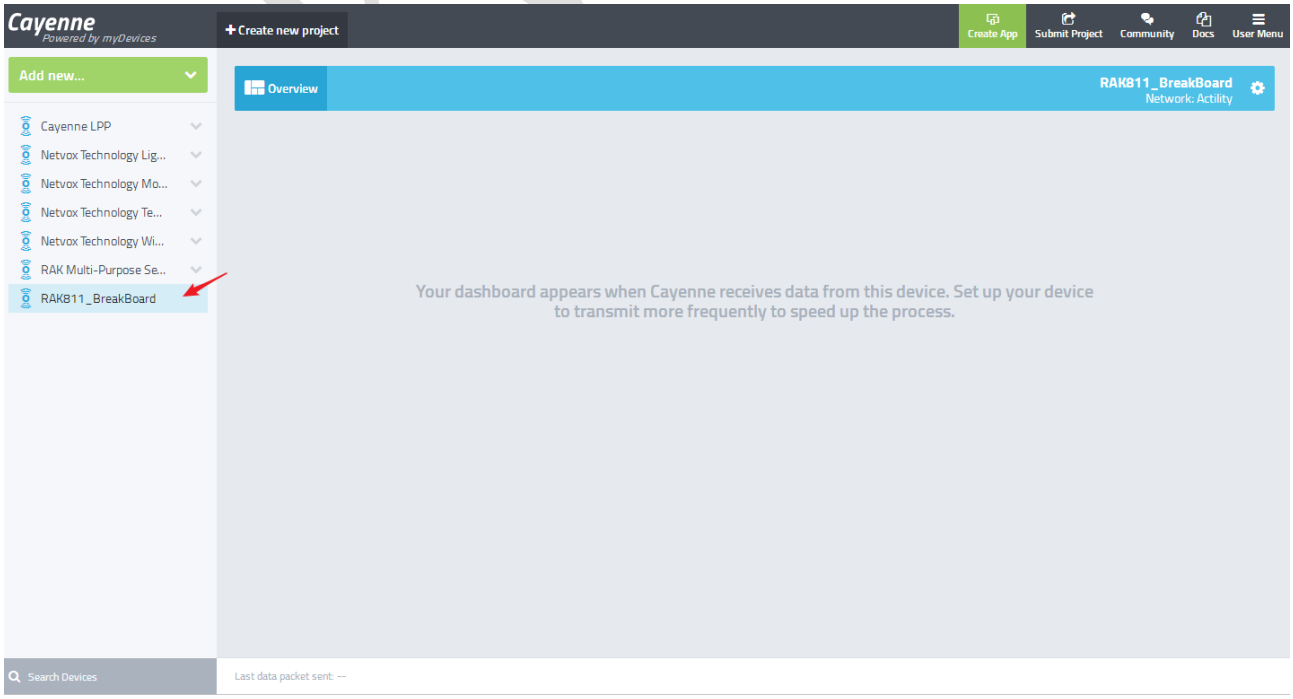
ThingPark Email: Your Actility account.

ThingPark Password: Your Actility Password.

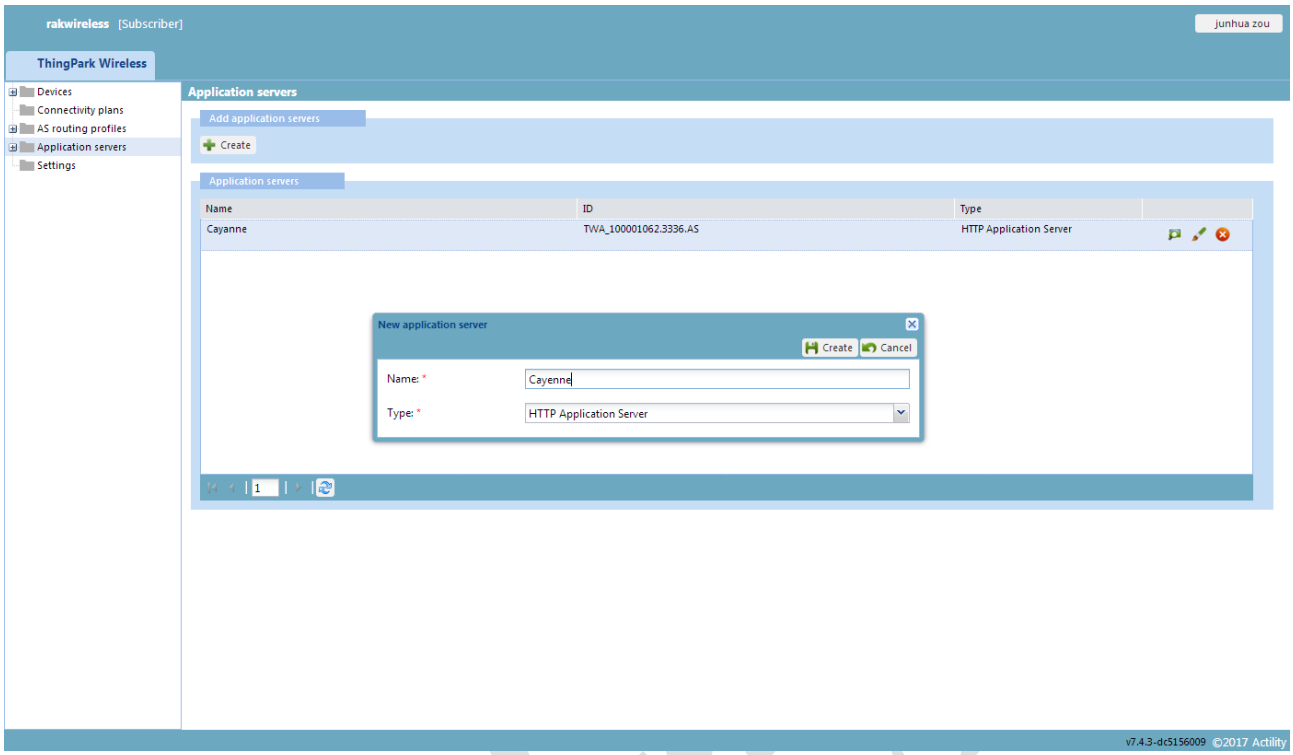
Location: Set according to your equipment.



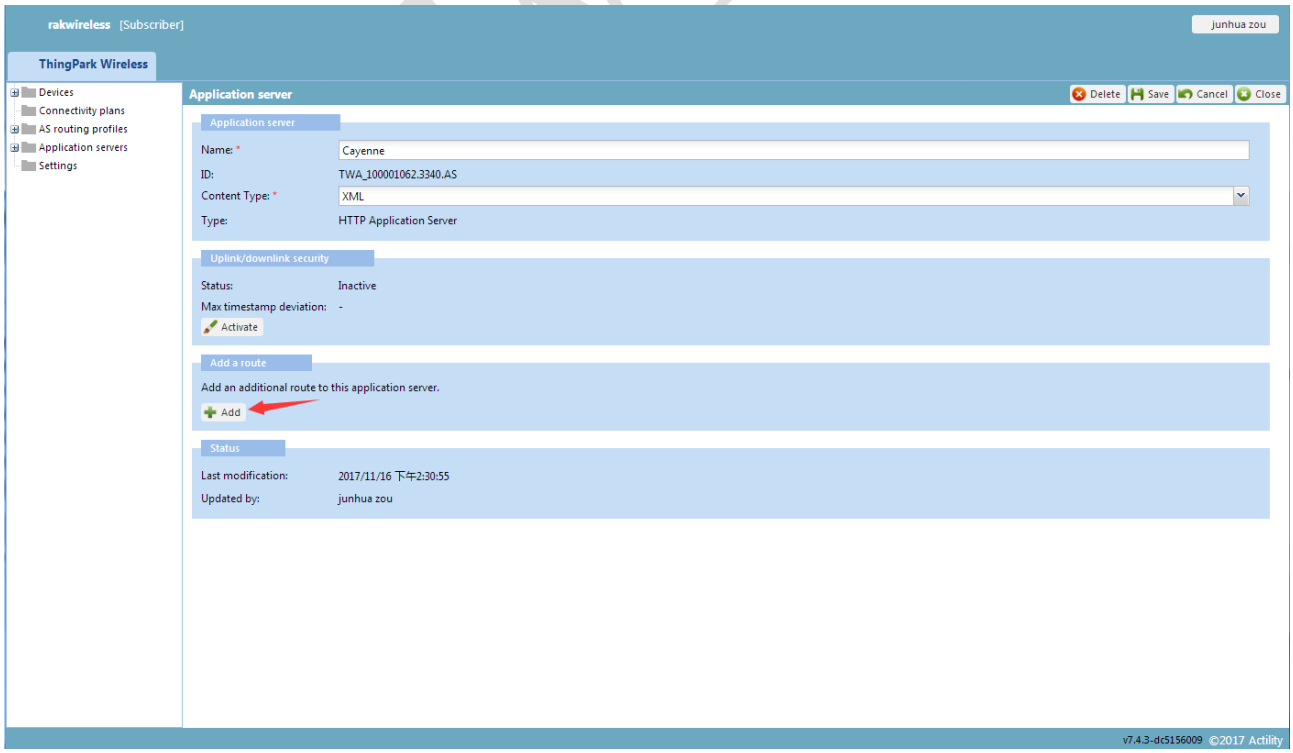
Finally click “Add Device”, the device is added successfully. Next you need to set the parameters of the TTN interface.



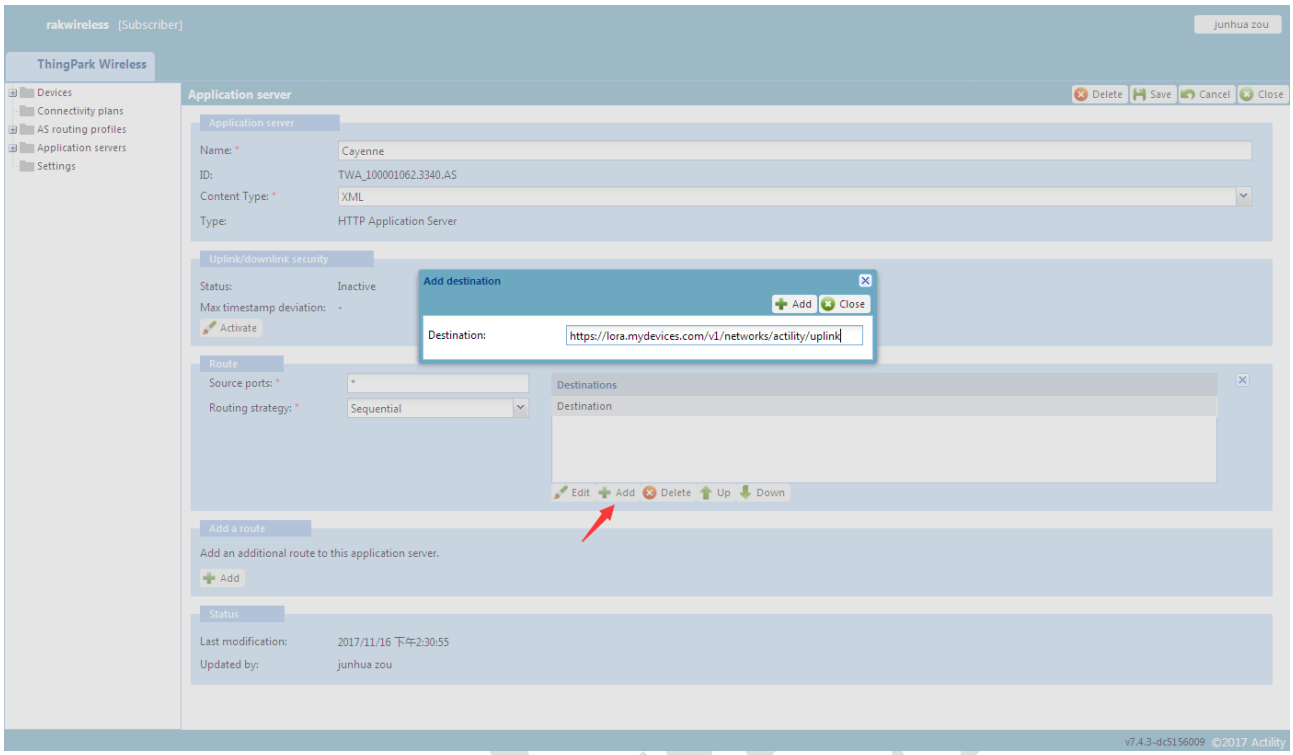
Open your Actility device management interface,Click the “Application servers” button ,then “Create”. In the settings interface, The Name can be filled Cayenne, Type select set to HTTP Application Server. Finally click Create.



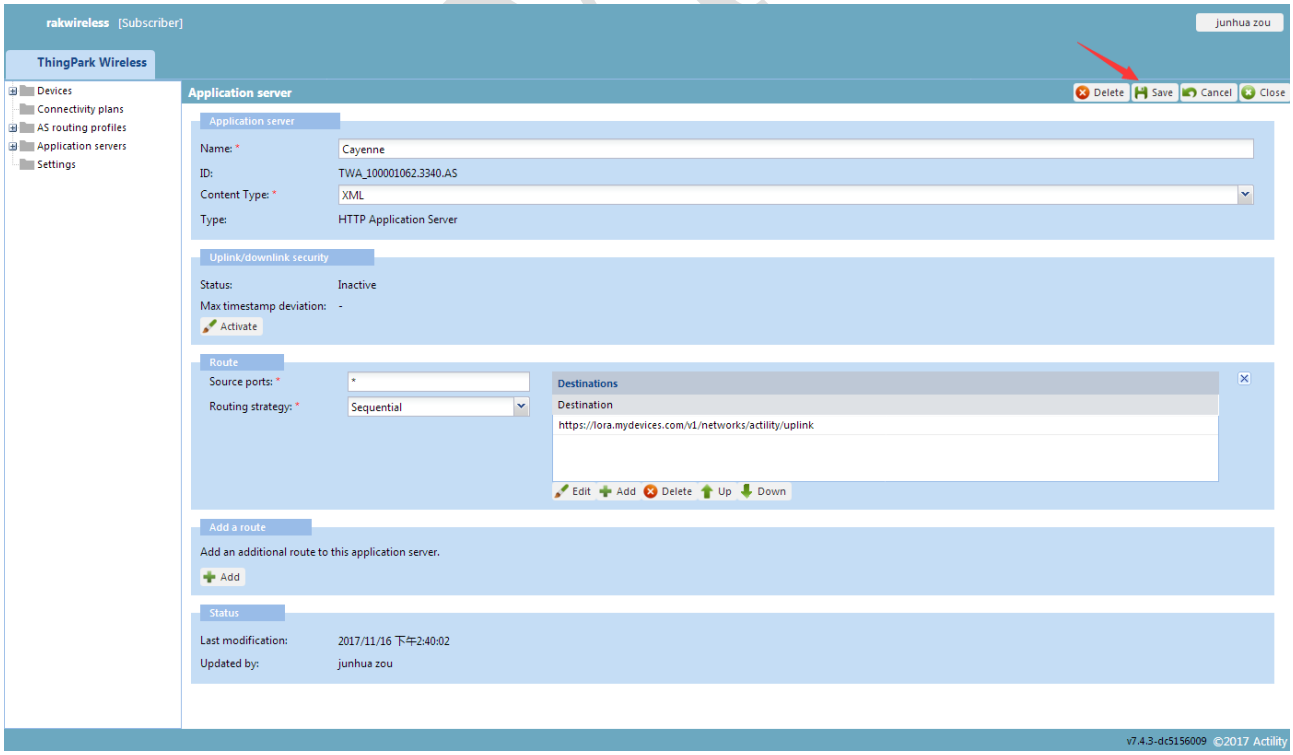
Click to create, the interface will jump link settings interface, click “Add a route”-> “Add” button. add the Cayenne server link address



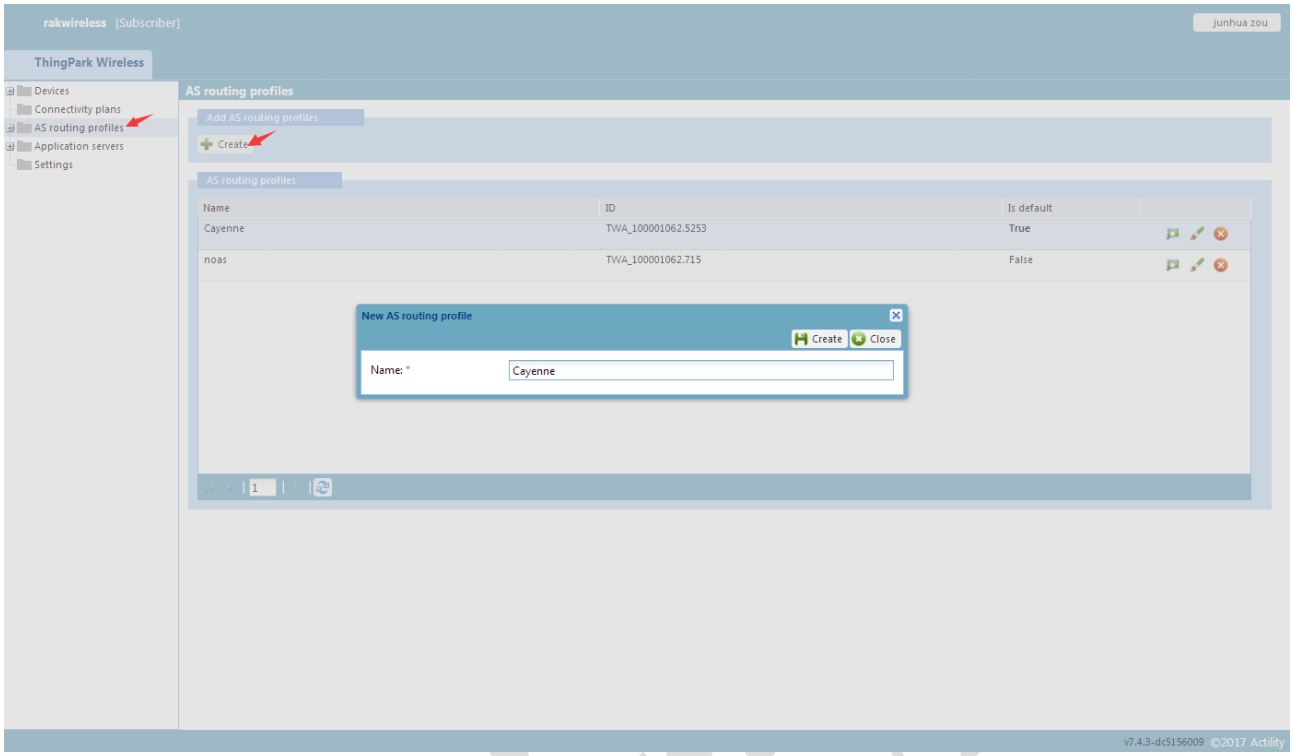
Add Cayenne server address: https://lora.mydevices.com/v1/networks/actility/uplink. For details, see the Cayenne documentation: https://mydevices.com/cayenne/docs/lora/



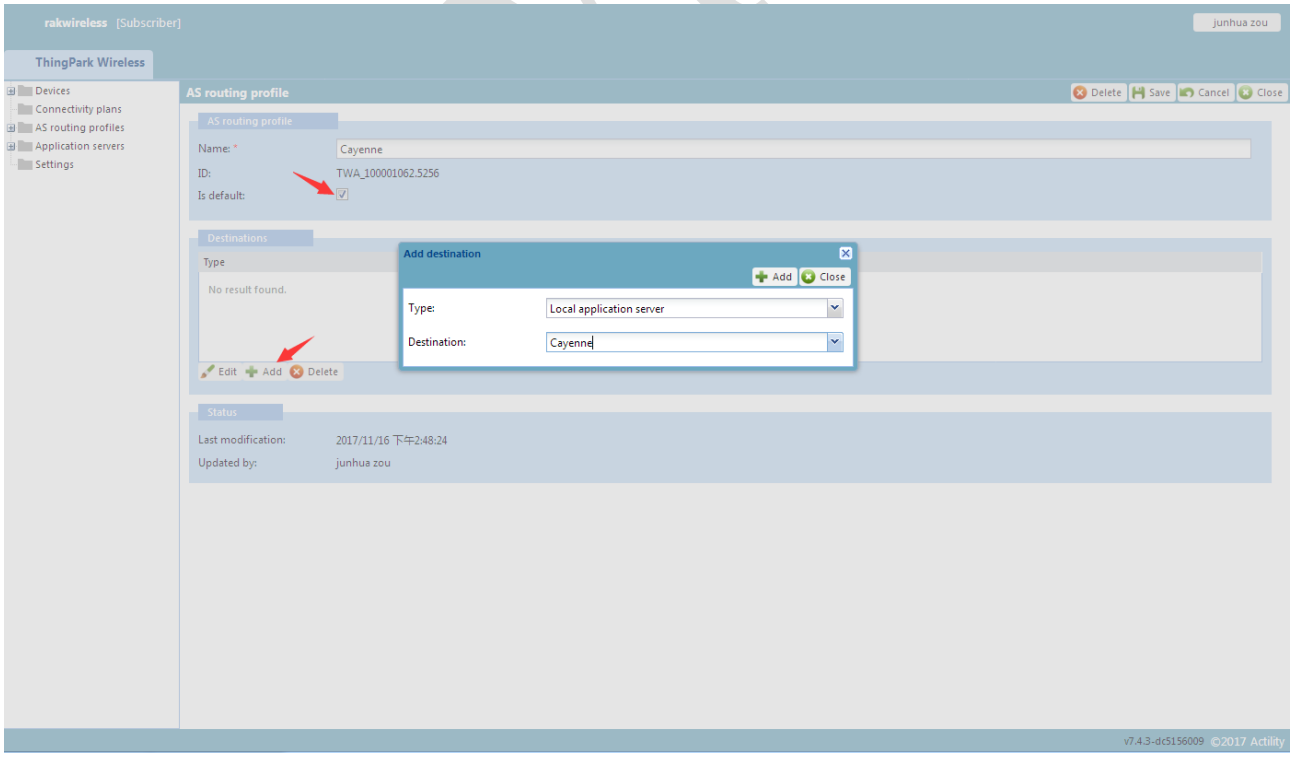
After adding, click “Save”.



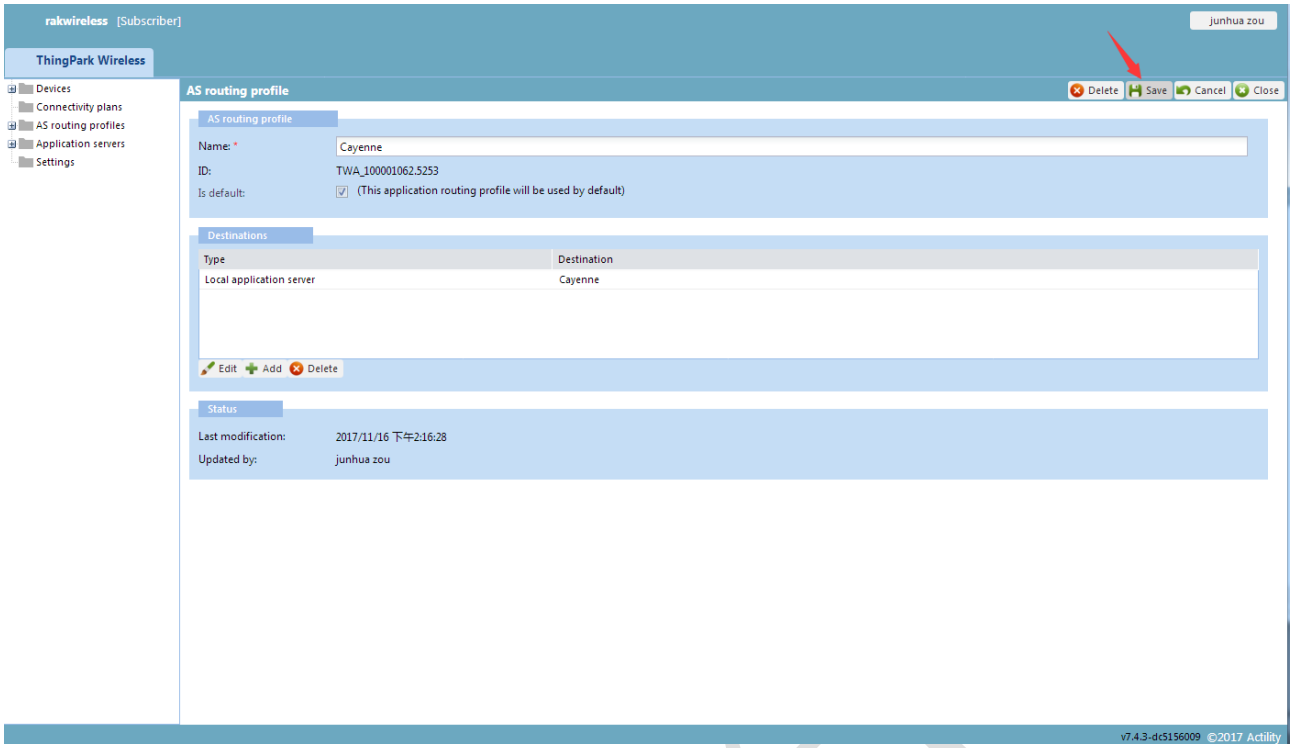
After setting the application server address, also need to set the AS routing profiles. Click “AS routing profiles” button, click “Create” to add. The name can also be set to Cayenne.



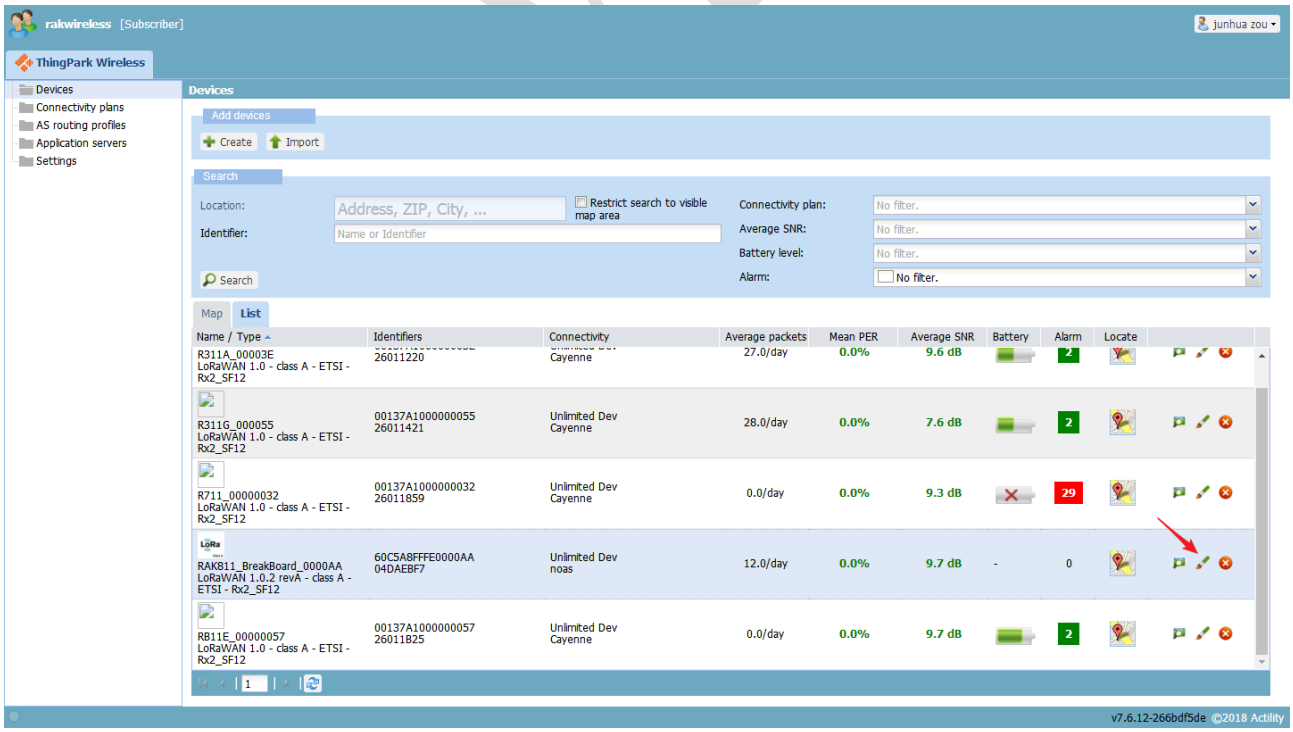
In the click to create, the next interface need to check “Is default” option, and then click the “Add” button, Type select “Local application server”, Destination select just created Cayenne.



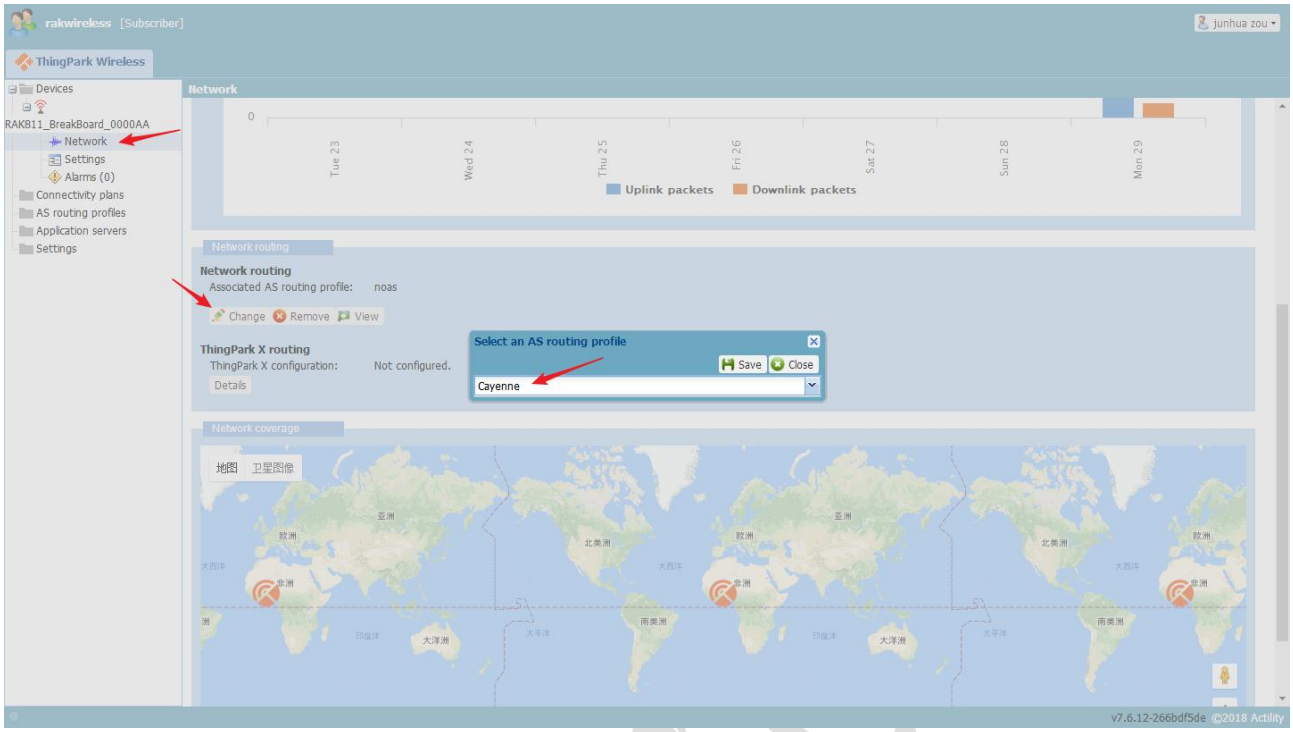
After adding, click “Save”.



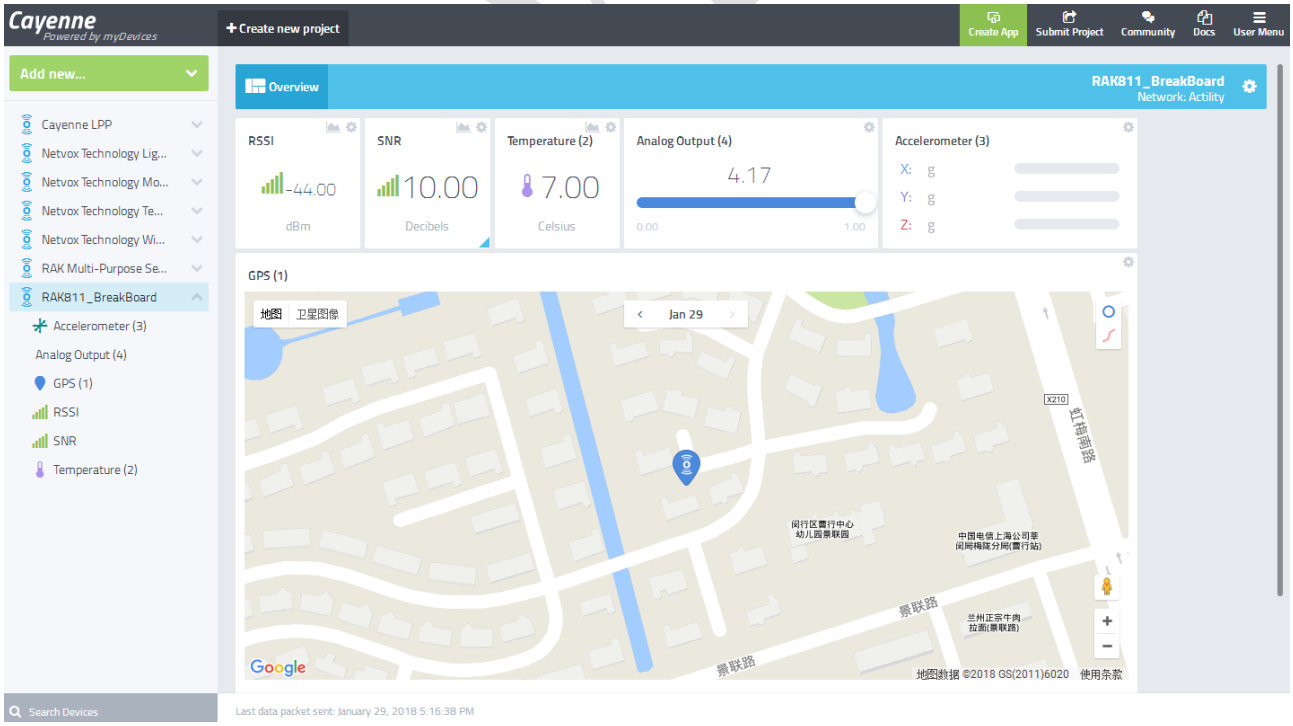
Finally, modify the device Application server routing profile parameters, this parameter is set to default when creating the device, here you need to modify the Cayenne just created. So click the device button and click the “Edit” button.



To the device settings interface, click on the left open the device settings card. select the “Network” button to click. select the Network routing click, and then click the Change button, select Cayenne, save. This completes all settings of Actility.



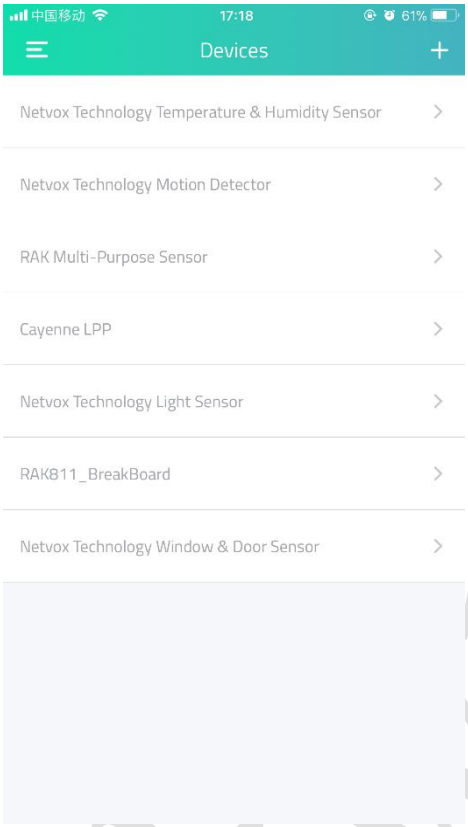
The Actility Cayenne is set up, After waiting for the device to be positioned, you will see in the Cayenne interface as shown below:

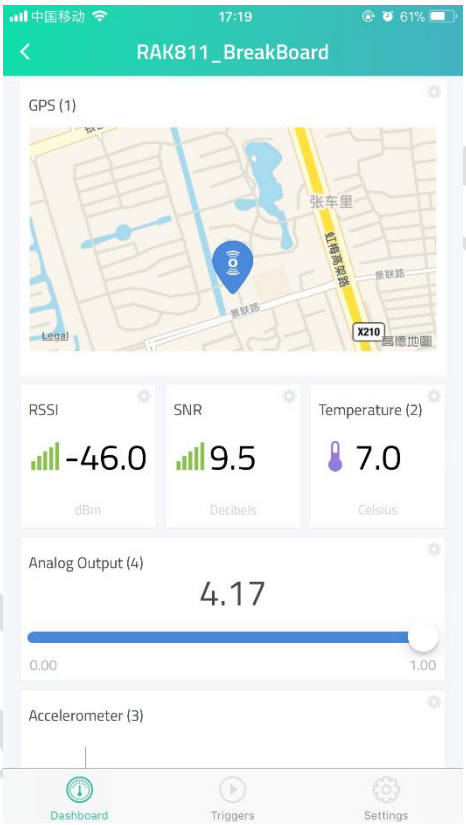


(This is the RAK811 TrackerBoard Data information,the RAK811 SensorNodeBoard will not have GPS data.)

2.6 Watch the data on the phone

After the data has been successfully imported into the Cayenne, you can view the sensor data on your phone just by downloading the Cayenne mobile app. Mobile APP supports IOS and Android platform. If you are an Apple phone, go to the Apple Store and search for Cayenne. If you are an Android phone, go to Google Store and search for Cayenne.(If you are a Chinese user, may not be able to access these, then you may need to VPN proxy). The usage method of mobile phone APP is similar to the webpage, and will not be described in detail.





3. Contact information

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Shenzhen

FAE mailbox: steven.tang@rakwireless.com

Tel : 0755-26506594

Fax: 0755-86152201

Address: Room 802, Yongfu building, No.1s06, Yongfu road, Baoan District , Shengzhen

4. Revision History

Version	Date	Change	Author
V1.0	2018-01-29	First release	Chace