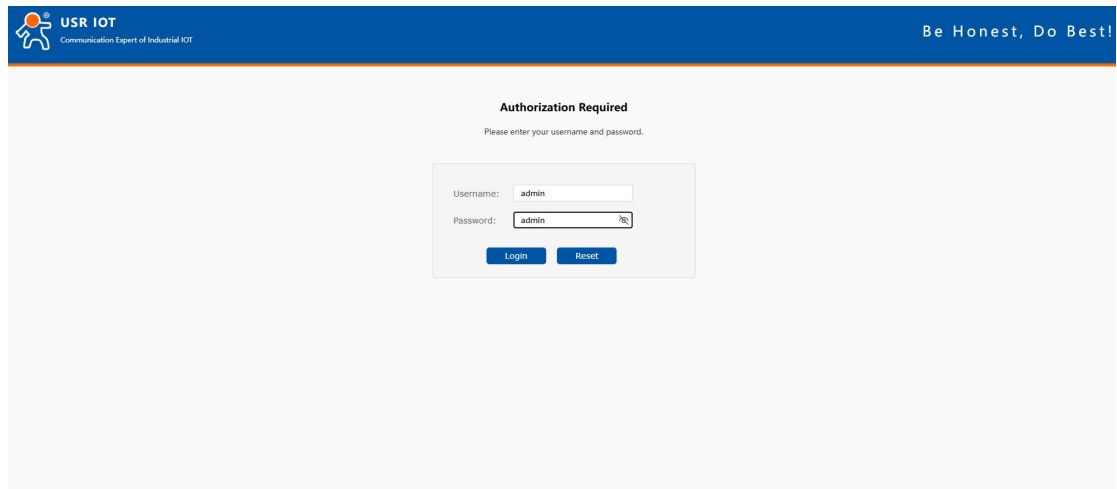


1. MQTT Edge Computing

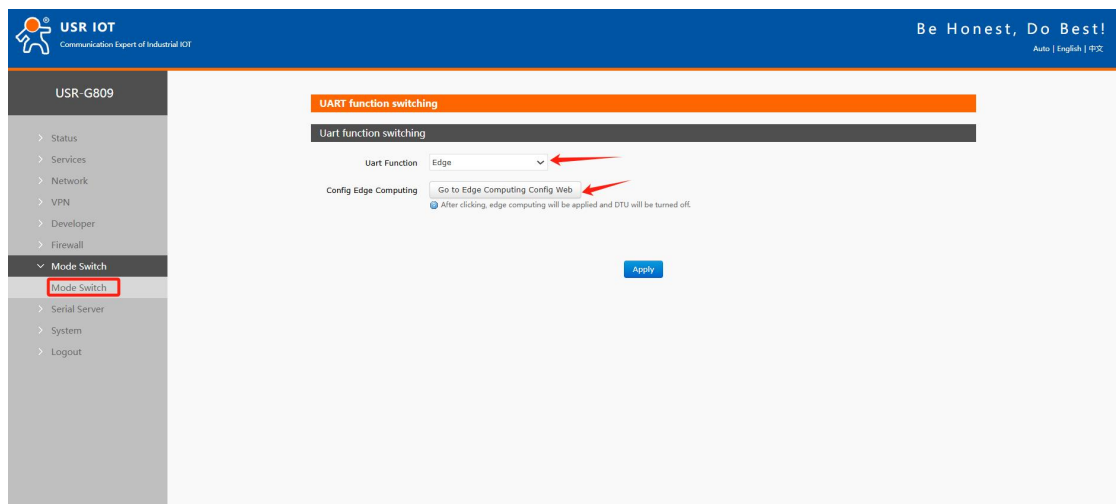
Open the browser and enter: 192.168.1.1 to log in to the built-in webpage,

then input the initial username/password: admin/admin



The image shows the login page of the USR IOT web interface. The header is blue with the USR IOT logo and tagline 'Communication Expert of Industrial IOT' on the left, and 'Be Honest, Do Best!' on the right. The main content area is white and features a central 'Authorization Required' box. This box contains a prompt 'Please enter your username and password.' and two input fields: 'Username:' with 'admin' entered and 'Password:' with 'admin' entered. Below the fields are 'Login' and 'Reset' buttons.

Find the mode switch - select "Edge Computing" - click "Switch to Edge Computing Mode Configuration Page"



The image shows the configuration page of the USR IOT web interface. The header is blue with the USR IOT logo and tagline 'Communication Expert of Industrial IOT' on the left, and 'Be Honest, Do Best!' on the right. The left sidebar is grey and contains a list of menu items: 'USR-G809', 'Status', 'Services', 'Network', 'VPN', 'Developer', 'Firewall', 'Mode Switch', 'Mode Switch', 'Serial Server', 'System', and 'Logout'. The 'Mode Switch' item is highlighted with a red box. The main content area is white and features a 'UART function switching' section. This section has a 'Uart function switching' header and a 'Uart Function' dropdown menu set to 'Edge'. Below this is a 'Config Edge Computing' section with a 'Go to Edge Computing Config Web' button and a note: 'After clicking, edge computing will be applied and DTU will be turned off.' An 'Apply' button is located at the bottom right of the section. Red arrows point to the 'Edge' dropdown and the 'Go to Edge Computing Config Web' button.

Click "Data Points" - click "Add" to add a slave device. In the example, RS485 is connected, select the Modbus RTU protocol, and the RS485 serial port number is 2.

Edge Computing EDGE Management

Data Point

IO Module

Protocol

Edge Gateway

Version: 1680844896

Local_IO
IO Slave
protocol: Local_IO

Slave_Status
Slave Status
0:offline 1:abnormal 2:online 3:stop
protocol: Slave_Status

Add **Import** **Export**

List of slave points

ID	Node name	Data Type	Decimal Number	Address	Read Write Status	Priority	Timeout(ms)	Data	Acquisition formula	Control formula	Node desc	Operation
1	DO01	Bit	0	DO 01	Read/Write	Level 1	2000	0	--	--	--	Edit Delete
2	DI01	Bit	0	DI 01	Only Read	Level 1	2000	0	--	--	--	Edit Delete

Total 2 15/page 1 Go to 1

V1.1.67

Edge Computing EDGE Management

Data Point

IO Module

Protocol

Edge Gateway

Version: 1680844896

Local_IO
IO Slave
protocol: Local_IO

Add

* Slave Name: device1

Slave Description: Please enter

* Acquisition protocol: Modbus_RTU

* Polling interval: 0 ms

* Merge acquisition: ☒ Open ☐ Close

* Slave switch: ☒

* Serial Number: 2

* Slave Address: 1

cancel sure

List of slave points

ID	Node name	Data Type	Decimal Number	Address	Read Write Status	Priority	Timeout(ms)	Data	Acquisition formula	Control formula	Node desc	Operation
1	DO01	Bit	0	DO 01	Read/Write	Level 1	2000	0	--	--	--	Edit Delete
2	DI01	Bit	0	DI 01	Only Read	Level 1	2000	0	--	--	--	Edit Delete

Total 2 15/page 1 Go to 1

V1.1.67

Click "Add slave points"

Edge Computing EDGE Management

Data Point

IO Module

Protocol

Edge Gateway

Version: 1753857225

Local_IO
IO Slave
protocol: Local_IO

Add

* Node name: temp

Node desc: Please enter

Register: 4 1 40001(usbrty)

* Data Type: 16 Bit Unsigned

* Position Number: 1

Decimal Number: 0

* Read Write Status: ☐ Only Read ☒ Read/Write

* Priority: Level 0

Acquisition formula @: Please enter

Control formula @: Please enter

* Timeout: 2000 ms

Unit: Please enter

cancel sure

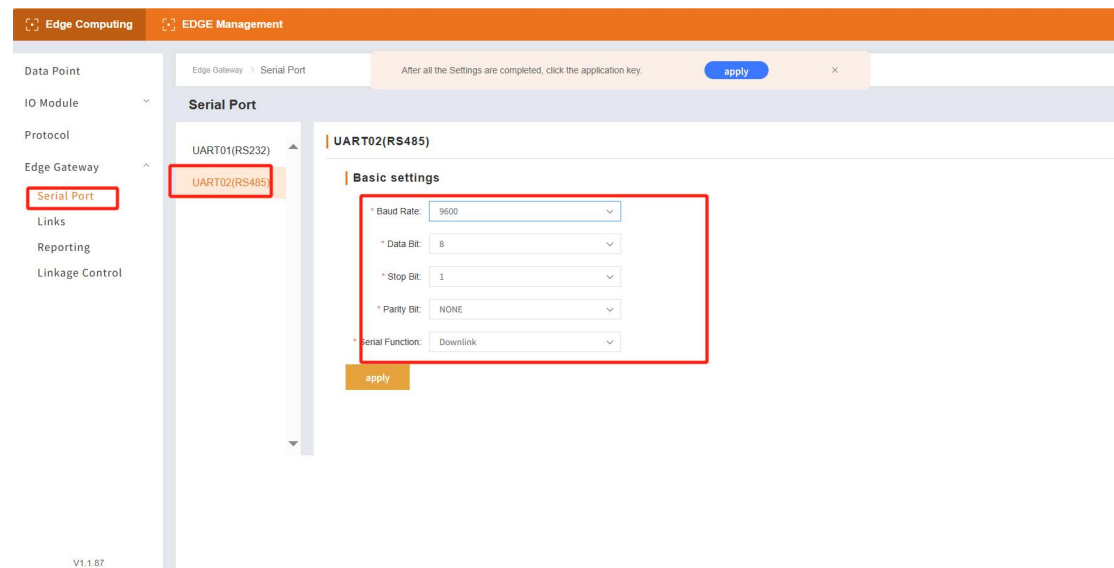
List of slave points

ID	Node name	Data Type	Decimal Number	Address	Read Write Status	Priority	Timeout(ms)	Data	Acquisition formula	Control formula	Node desc	Operation
1	DO01	Bit	0	DO 01	Read/Write	Level 1	2000	0	--	--	--	Edit Delete
2	DI01	Bit	0	DI 01	Only Read	Level 1	2000	0	--	--	--	Edit Delete

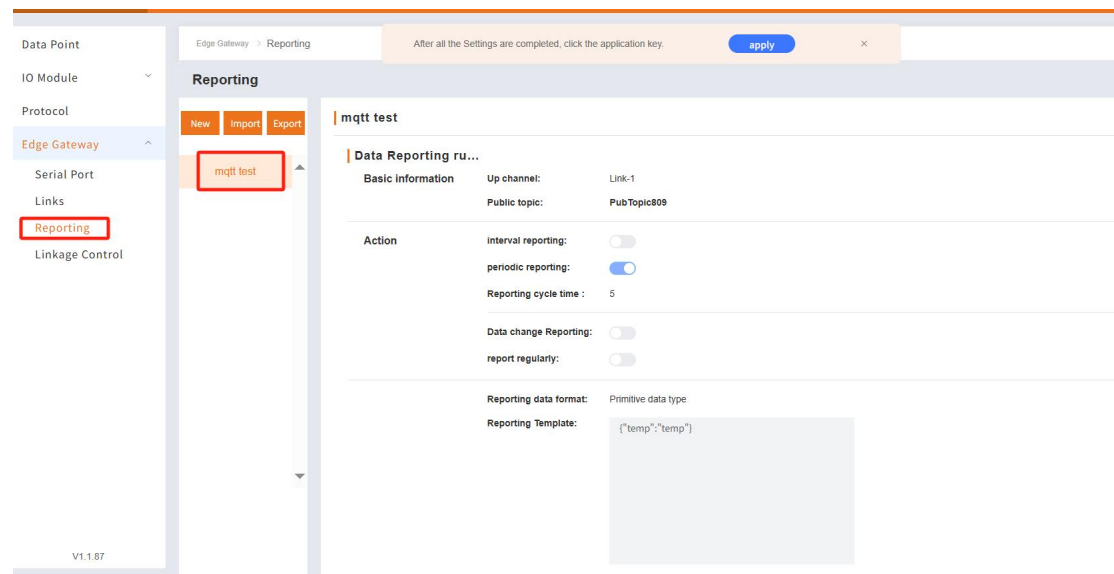
Total 0 15/page 1 Go to 1

V1.1.67

Click "Edge Gateway" - click "Serial Port Management" - set the parameters of Serial Port 2, and note that they should be consistent with the parameters of the actual serial port device.



Set up data reporting and add an MQTT link.



Edge Computing

EDGE Management

Data Point

IO Module

Protocol

Edge Gateway

Serial Port

Links

Reporting

Linkage Control

Link-1

Link-2

Link-1

Basic settings

Publish settings

Subscribe settings

Communication Protocol

MQTT

Protocol Select

MQTT-3.1.1

Remote Server Address

mqtt://n

Client ID

809809

Remote Port

1883

Heartbeat time

60

s

Reconnection Interval

5

s

Clean Session

Connection verification

Username

usr_

Password

usr_

After the group is successfully added, click "Add" to select the points
(do not forget to select them, otherwise the server will not receive the data!!!)

Data Point

IO Module

Protocol

Edge Gateway

Serial Port

Links

Reporting

Linkage Control

Act

After all the Settings are completed, click the application key.

apply

Reporting cycle time

5

Data change Reporting

report regularly

Reporting data format

Primitive data type

Reporting Template

["temp":"temp"]

Node Table

ID	Node name	Slave Name	Data Type	Read Write Status	Operation
1	temp	device1	16 Bit Unsigned	Read/Write	Delete

Add

Delete

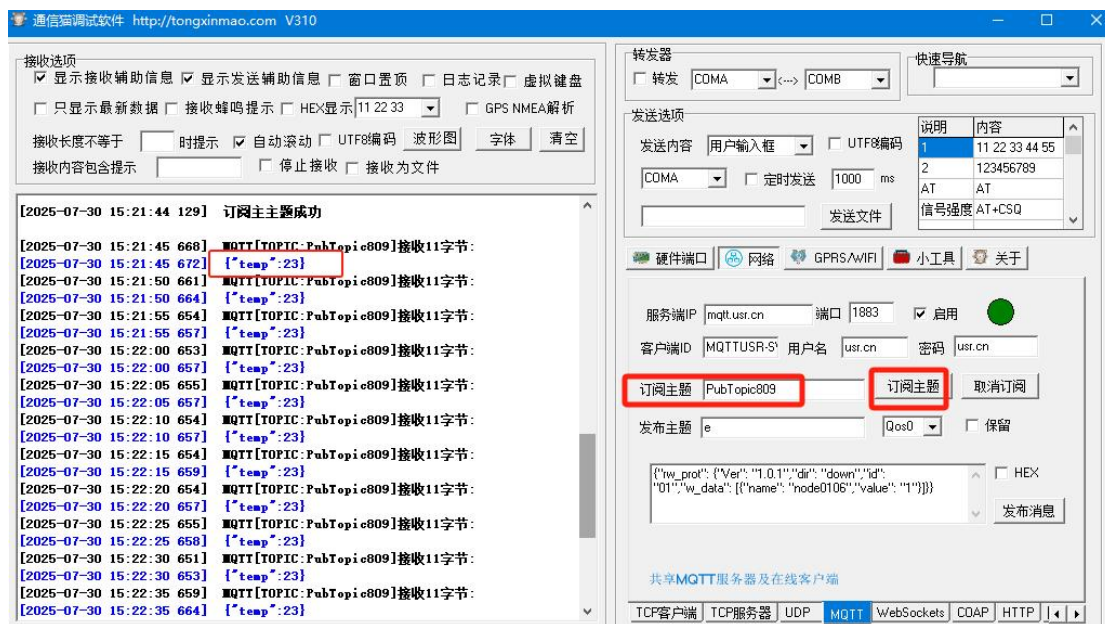
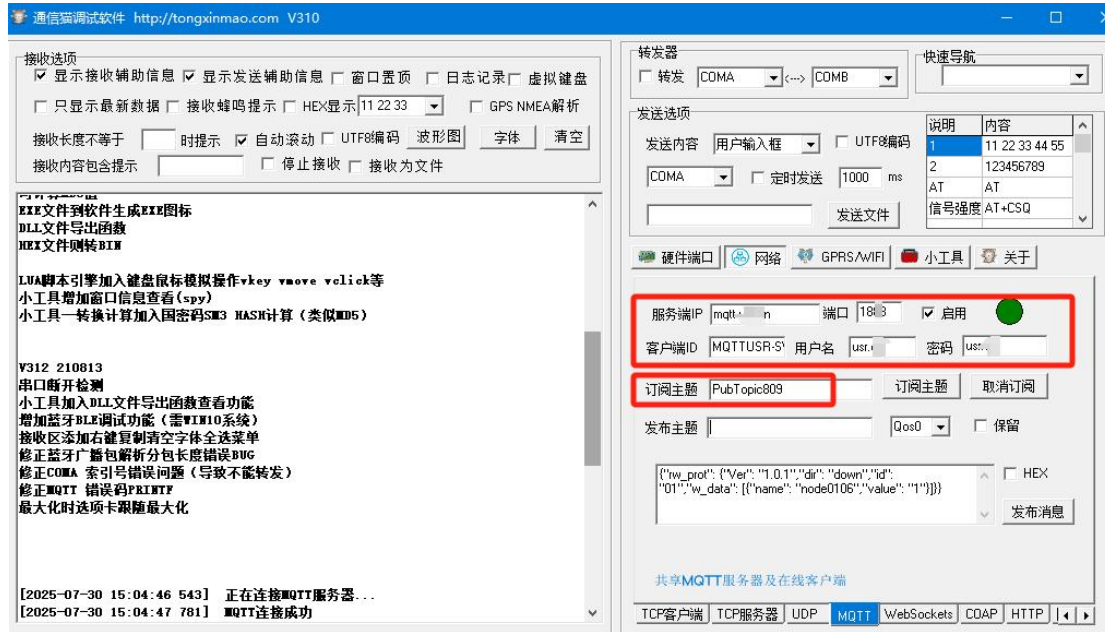
Total 1

10/page

1

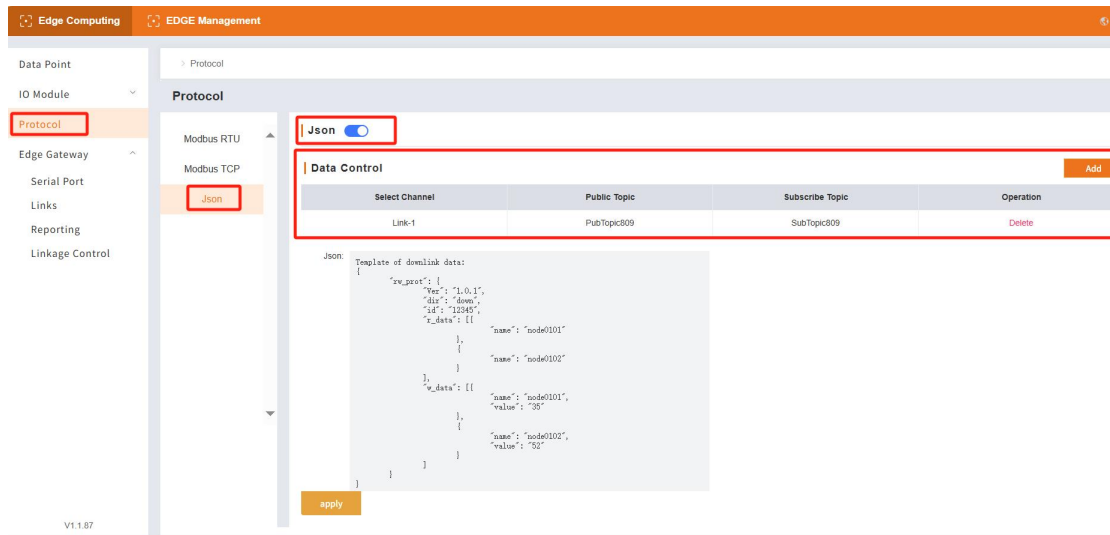
Go to 1

Verify serial port data from the MQTT server



2. Verify writing serial data from MQTT server JSON delivery

Set up JSON protocol conversion, check the MQTT link, and set the publish and subscribe topics.



Publish the **SubTopic809** topic via MQTT and send data in the following format.

```
{
  "rw_prot": {
    "Ver": "1.0.1",
    "dir": "down",
    "id": "12345",
    "r_data": [
      {
        "name": "temp"
      },
      {
        "name": "Hum"
      }
    ],
    "w_data": [
      {
        "name": "temp",
        "value": "9"
      },
      {
        "name": "Hum",
        "value": "19"
      }
    ]
  }
}
```



```
    }  
  },  
  "w_data": [{  
    "name": "temp",  
    "value": "9"  
  },  
  {  
    "name": "DO01",  
    "value": "0"  
  }  
]  
}  
}
```

