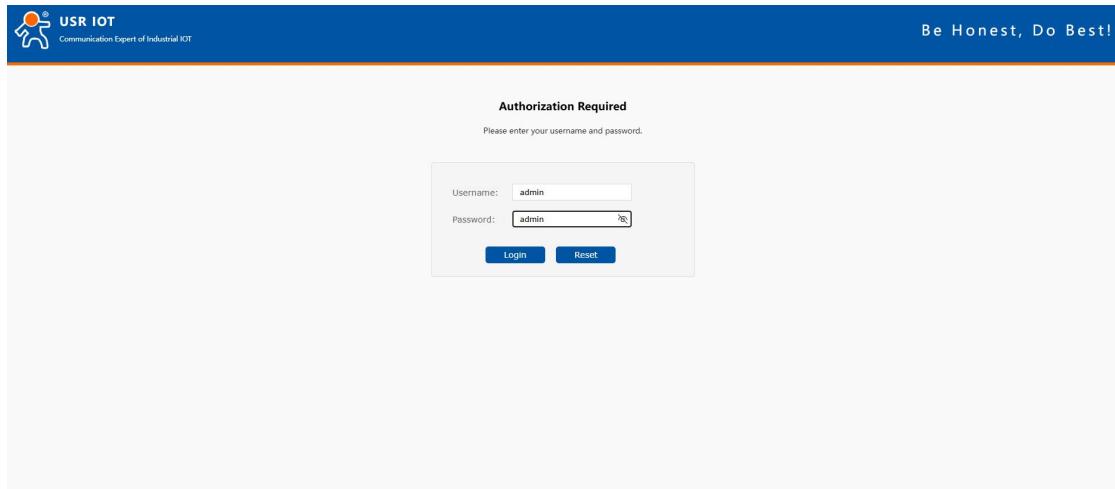


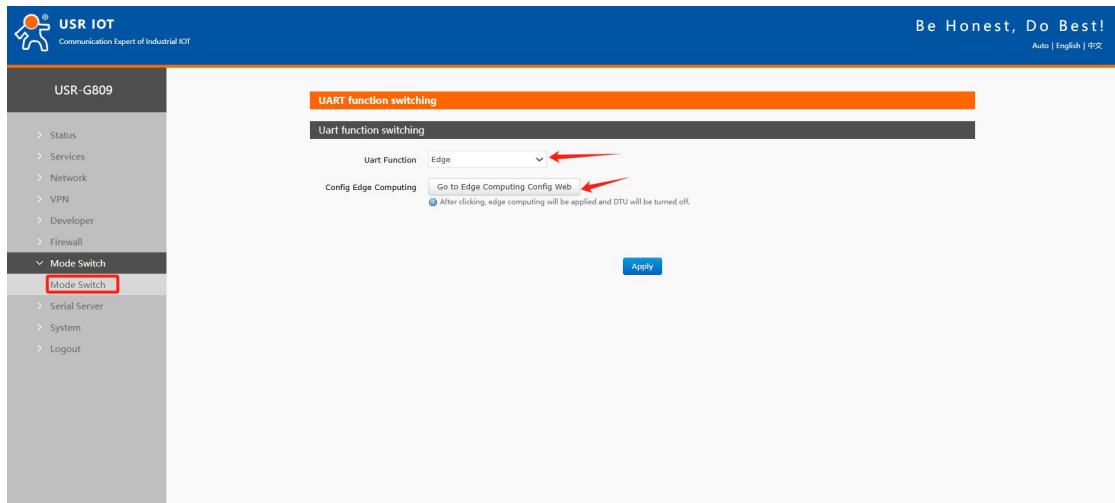
# 1. MQTT Edge Computing

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



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



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

**Data Point**

**Slave**

Version: 1680844896

**Local\_IO** online  
IO Slave  
protocol: Local\_IO

**Slave\_Status** offline  
Slave Status  
0:offline 1:abnormal 2:online 3:stop  
protocol: Slave Status

**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	ReadWrite	Level 1	2000	0	--	--	--	<a href="#">Edit</a> <a href="#">Delete</a>
2	DI01	Bit	0	DI 01	Only Read	Level 1	2000	0	--	--	--	<a href="#">Edit</a> <a href="#">Delete</a>

Total 2 15/page [Last](#) [Next](#) Go to 1

V1.87

**Edge Computing** **EDGE Management**

**Data Point**

IO Module  
Protocol  
Edge Gateway

**Data Point**

**Slave**

Version: 1680844896

**Local\_IO** online  
IO Slave  
protocol: Local\_IO

**Add**

\* Slave Name: device1  
Slave Description: Please enter  
\* Acquisition protocol: Modbus\_RTU  
\* Polling interval: 0 ms  
\* Merge acquisition: Open  
\* 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	ReadWrite	Level 1	2000	0	--	--	--	<a href="#">Edit</a> <a href="#">Delete</a>
2	DI01	Bit	0	DI 01	Only Read	Level 1	2000	0	--	--	--	<a href="#">Edit</a> <a href="#">Delete</a>

Total 2 15/page [Last](#) [Next](#) Go to 1

V1.87

Click "Add slave points"

**Edge Computing** **EDGE Management**

**Data Point**

IO Module  
Protocol  
Edge Gateway

**Data Point**

**Slave**

Version: 1753657225

**Local\_IO** online  
IO Slave  
protocol: Local\_IO

**Add**

\* Node name: temp  
Node desc: Please enter  
Register: 4 | 1 | 40001(unsigned)  
\* Data Type: 16 Bit Unsigned  
\* Position Number: 1  
Decimal Number: 0  
\* Read Write Status: Only Read (radio button)  Only Write (radio button)   
\* 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
----	-----------	-----------

Total 0 15/page [Last](#) [Next](#)

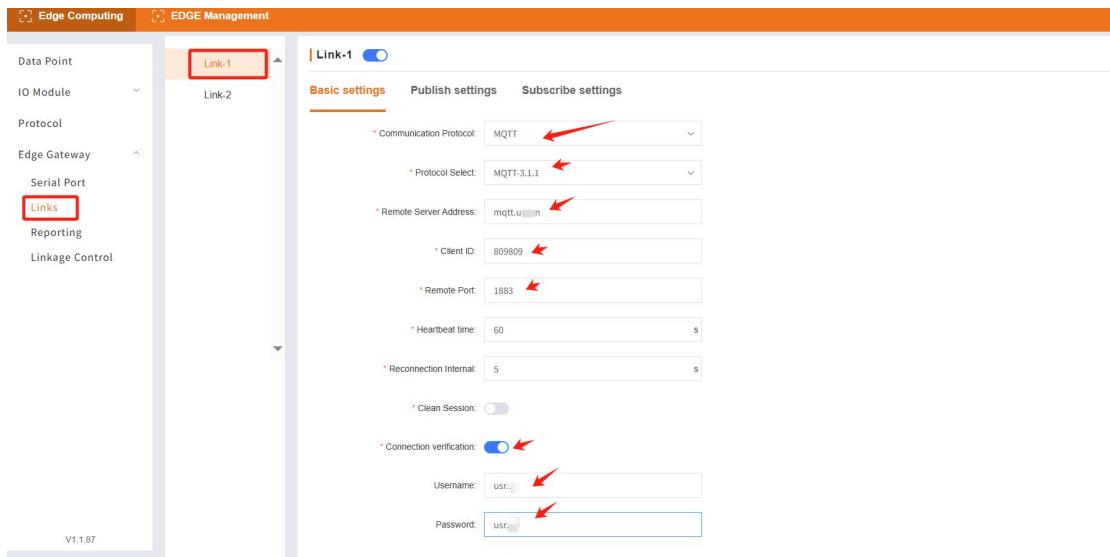
V1.87

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.

The screenshot shows the 'Serial Port' management interface for an Edge Gateway. The left sidebar lists 'Data Point', 'IO Module', 'Protocol', 'Edge Gateway' (selected), 'Serial Port' (highlighted with a red box), 'Links', 'Reporting' (selected), and 'Linkage Control'. The main panel shows 'UART01(RS232)' and 'UART02(RS485)' under 'Serial Port'. The 'UART02(RS485)' section is expanded, showing 'Basic settings' with fields: Baud Rate (9600), Data Bit (8), Stop Bit (1), Parity Bit (NONE), and Serial Function (Downlink). An 'apply' button is at the bottom of this section. The status bar at the bottom left says 'V1.1.87'.

Set up data reporting and add an MQTT link.

The screenshot shows the 'Reporting' setup interface for an Edge Gateway. The left sidebar lists 'Data Point', 'IO Module', 'Protocol', 'Edge Gateway' (selected), 'Serial Port', 'Links', 'Reporting' (selected), and 'Linkage Control'. The main panel shows 'New', 'Import', and 'Export' buttons, and 'mqtt test' (highlighted with a red box) under 'Reporting'. The 'mqtt test' section shows 'Data Reporting rule...' with 'Basic Information' (Up channel: Link-1, Public topic: PubTopic809), 'Action' (interval reporting: off, periodic reporting: on, Reporting cycle time: 5), and 'Reporting data format' (Primitive data type). The 'Reporting Template' field contains the JSON array: [{"temp": "temp"}]. An 'apply' button is at the bottom of the 'Data Reporting rule...' section. The status bar at the bottom left says 'V1.1.87'.

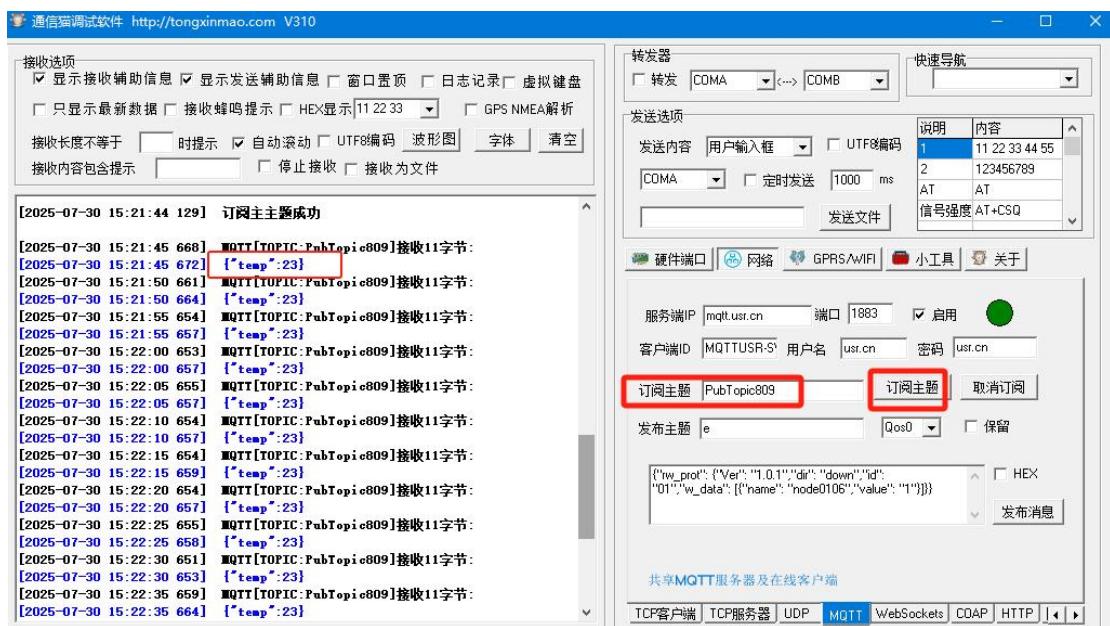
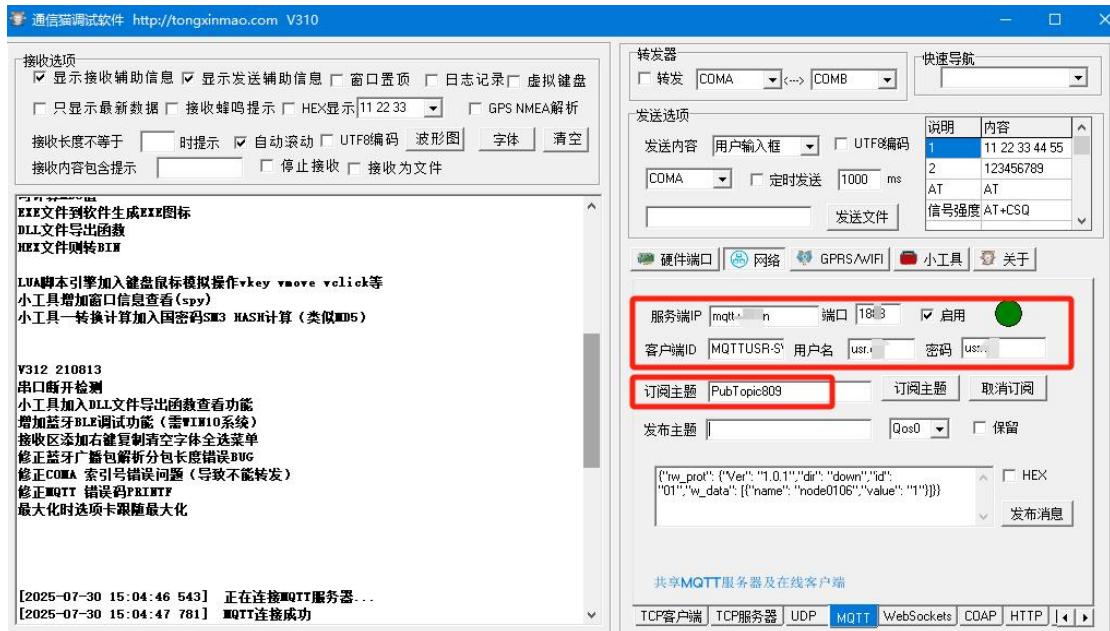


**After the group is successfully added, click "Add" to select the points**

**(do not forget to select them, otherwise the server will not receive the data!!!)**

ID	Node name	Slave Name	Data type	Read Write Status	Operation
1	temp	device1	16 Bit Unsigned	Read/Write	<a href="#">Delete</a>

**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.

The screenshot shows the 'Protocol' configuration for 'Modbus TCP'. The 'Json' toggle is selected. The 'Data Control' section displays a JSON template for download data:

```

Json: Template of download data:
{
    "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"
            }
        ]
    }
}

```

**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"
            }
        ]
    }
}
```

```

[2025-07-30 15:49:07.026] MQTT发送文本消息, 主题: SubTopic809 长度: 276字节:
[2025-07-30 15:49:07.026] {
  "rv_prot": [
    {
      "ver": "1.0.1",
      "dir": "down",
      "id": "12345",
      "r_data": [
        {
          "name": "temp",
          "value": "9"
        },
        {
          "name": "hum",
          "value": "19"
        }
      ]
    }
  ]
}

[2025-07-30 15:49:07.079] MQTT发送成功 token: 2
[2025-07-30 15:49:07.337] MQTT[TOPIC:PubTopic809]接收341字节:
[2025-07-30 15:49:07.340] {
  "rv_prot": [
    {
      "dir": "up",
      "ver": "1.0.1",
      "id": "12345",
      "r_data": [
        {
          "name": "temp",
          "value": "9",
          "err": "0"
        },
        {
          "name": "hum",
          "value": "19",
          "err": "0"
        }
      ],
      "l": [
        {
          "name": "temp",
          "value": "9",
          "err": "0"
        },
        {
          "name": "hum",
          "value": "19",
          "err": "0"
        }
      ],
      "ll": [
        {
          "name": "temp",
          "value": "9",
          "err": "0"
        },
        {
          "name": "hum",
          "value": "19",
          "err": "0"
        }
      ]
    }
  ]
}

```

## 2. Verify DIDO status reporting

Add DI01 and DO01 data points to the reporting template for reporting.

Add the DI01 and DO01 point tables.

The screenshot shows the 'EDGE Management' tab selected in the top navigation bar. On the left, a sidebar lists 'Data Point', 'IO Module', 'Protocol', 'Edge Gateway', 'Serial Port', 'Links', and 'Reporting'. The 'Reporting' item is highlighted with a red box. In the main area, there are two sections: 'periodic reporting:' with a toggle switch set to 'on' and a 'Reporting cycle time:' input field set to '5'; and 'Data change Reporting:' with a toggle switch set to 'off' and a 'report regularly:' toggle switch set to 'off'. Below these is a 'Reporting data format:' section with 'Primitive data type' selected and a 'Reporting Template:' input field containing '[{"DIO1": "DIO1", "DOO1": "DOO1"}]'. At the bottom, a 'Node Table' section displays two rows of data:

ID	Node name	Slave Name	Data Type	Read Write Status	Operation
1	DIO1	Local_IO	Bit	ReadWrite	<a href="#">Delete</a>
2	DOO1	Local_IO	Bit	Only Read	<a href="#">Delete</a>

At the bottom right of the table are buttons for 'Add' (orange), 'Delete' (pink), and other controls. The footer of the interface shows 'V1.1.87'.

Subscribe to the PubTopic809 topic via MQTT to obtain the IO status.

The screenshot shows the 'Tongxinmao MQTT Test Software' interface. On the left, a log window displays a series of MQTT messages received on the 'PubTopic809' topic. A red box highlights the last message in the log:

```
[2025-07-30 15:59:14 737] [{"DIO1": 0, "DOO1": 1}]
```

To the right is a configuration panel for publishing messages. It includes sections for '转发器' (Forwarder) with a dropdown set to 'COMA' and a '快速导航' (Quick Navigation) search bar; '发送选项' (Send Options) with a '发送内容' (Content) dropdown set to '用户输入框' (User Input Box) and a 'UTF8编码' (UTF8 Encoding) checkbox; and a '发送文件' (Send File) button. The '硬件端口' (Hardware Port) tab is selected. The '服务端IP' (Service IP) is set to 'mqtts.usr.cn' and the '端口' (Port) is '1883'. The '启用' (Enable) checkbox is checked. The '客户端ID' (Client ID) is 'MQTTUSR-S1', '用户名' (Username) is 'usr.cn', and '密码' (Password) is 'usr.cn'. The '订阅主题' (Subscribe Topic) is 'PubTopic809' and the '发布主题' (Publish Topic) is 'SubTopic809'. The 'QoS0' (Quality of Service) is selected. At the bottom, tabs for 'TCP客户端' (TCP Client), 'TCP服务器' (TCP Server), 'UDP', 'MQTT' (selected), 'WebSockets', 'COAP', and 'HTTP' are shown.

## 4. Verify the status of remotely controlled DO (Digital Output)

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": "D001",
            "value": "0"
        }
    ]
}

```

通信监视器软件: [http://tongxinximao.com\\_V310](http://tongxinximao.com_V310)

接收选项  
 显示接收辅助信息  显示发送辅助信息  窗口资源  日志记录  虚拟键盘  
 只显示最新数据  接收帧号提示  HEX显示 [112233]  GPS NMEA解析  
 接收长度大于:  时提示  动态 [UTF8编码] 波形图 字体 清空  
 接收内容包含提示:  停止接收  接收为文件

```

        "value": "",
        "err": "1"
    ]
}
]
[2025-07-30 16:00:54.806] MQTT[TOPIC:FakTopic:809]接收19字节:
[2025-07-30 16:00:54.806] ["D001":0,"D001":1]
[2025-07-30 16:00:59.734] MQTT[TOPIC:FakTopic:809]接收19字节:
[2025-07-30 16:00:59.734] ["D001":0,"D001":1]
[2025-07-30 16:01:03.742] MQTT发送文本消息, 主题: SubTopic809 长度: 276字节:
[2025-07-30 16:01:03.744] [
    "rv_recv": 1
    "Ver": "1.0.1",
    "dir": "down",
    "id": "12345",
    "r_data": [
        {
            "name": "temp"
        },
        {
            "name": "Hum"
        }
    ],
    "s_data": [
        {
            "name": "temp",
            "value": "9"
        },
        {
            "name": "D001",
            "value": "0"
        }
    ]
]
[2025-07-30 16:01:03.801] MQTT发送成功 taken: 4
[2025-07-30 16:01:04.736] MQTT[TOPIC:FakTopic:809]接收19字节:
[2025-07-30 16:01:04.736] ["D001":0,"D001":1]
[2025-07-30 16:01:07.078] MQTT[TOPIC:FakTopic:809]接收93字节:
[2025-07-30 16:01:07.082] [
    "rv_recv": 1
    "dir": "up",
    "Ver": "1.0.1",
    "id": "12345",
    "err": "1"
]
[2025-07-30 16:01:09.740] MQTT[Topic:17...:809]接收9字节:
[2025-07-30 16:01:09.742] ["D001":0,"D001":0]
[2025-07-30 16:01:14.732] MQTT[TOPIC:FakTopic:809]接收19字节:
[2025-07-30 16:01:14.736] ["D001":0,"D001":0]

```