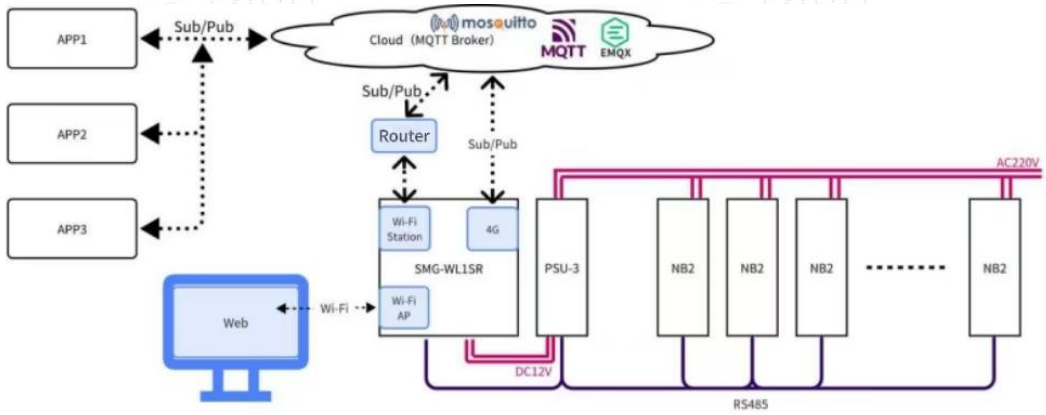
How to configure SMG-WSR Open Protocol Gateway

This paper describes how to realize data acquisition and remote control of NB2 through open protocol gateway. It involves NB2 series smart CB, PSU-3 power supply, SMG-WSR open protocol gateway.

1. System overview

This file describes the system topology of the Open Protocol Gateway application. The Open Protocol Gateway mainly provides the MQTT protocol interaction interface.



2. Hardware preparation

Equipment	Quantity	Role
SMG-WSR DC12V 00150003	1	Connecting to a remote server via Wi-Fi
PSU-3	1	DC12V power supply for the gateway
NB2-40ZT	1	As a gateway sub-device, it collects electrical parameters to realize remote control
Mobile phones (with access to mobile networks)	1	Shared 2.4G network for gateway (also available with wireless router)

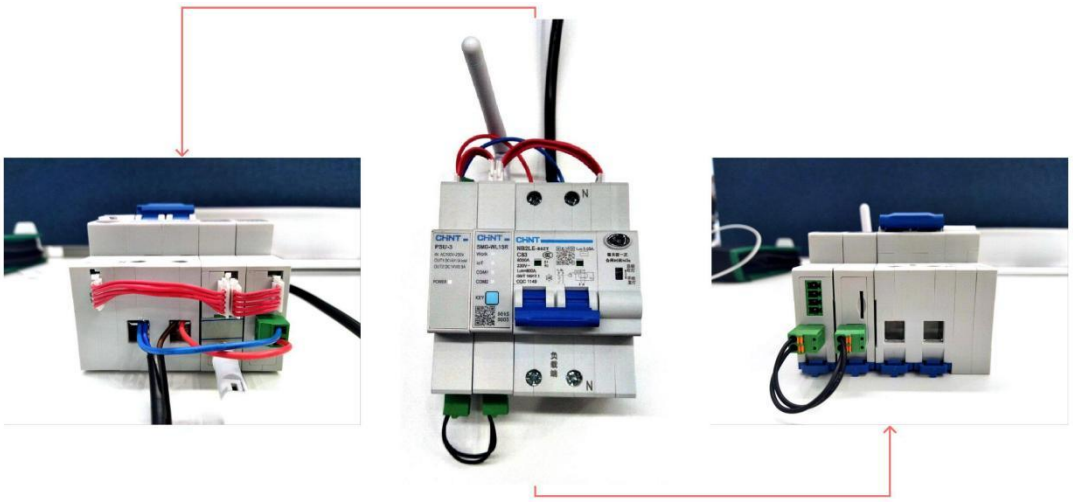
PC (with Wi-Fi and internal browser)	1	Used to access the built-in web page of the gateway and configure the gateway parameters through the web page.

3. Software preparation

Software	Role	Remarks
MQTT proxy, also known as MQTT server • The MQTT proxy used in this demo is only for verifying MQTT connections, and is not intended for use in production environments, as its network may experience anomalies at any time. • It is also possible to build your own LAN MQTT server using mosquitto	Receive remote connections from the gateway, and receive connections from MQTT clients.	IP：121.43.188.135 Port:11883
MQTT client tool. • This article uses mqttfx, you can also use other mqtt client tools	Receives data from the gateway and sends control commands to the gateway.	 mqttfx-1.7.1-windows-x64 (1).ex
PC Browser. • Suggested Edge	Access the gateway Web page to configure the gateway network and the MQTT server parameters that the gateway connects to	

4. Connecting equipment

As shown in the figure, connect the gateway, circuit breaker, PSU-3. After normal connection and power supply, the PSU-3, circuit breaker and gateway all have indicator lights working. Gateway at this time Work light for the 2Hz blinking state.



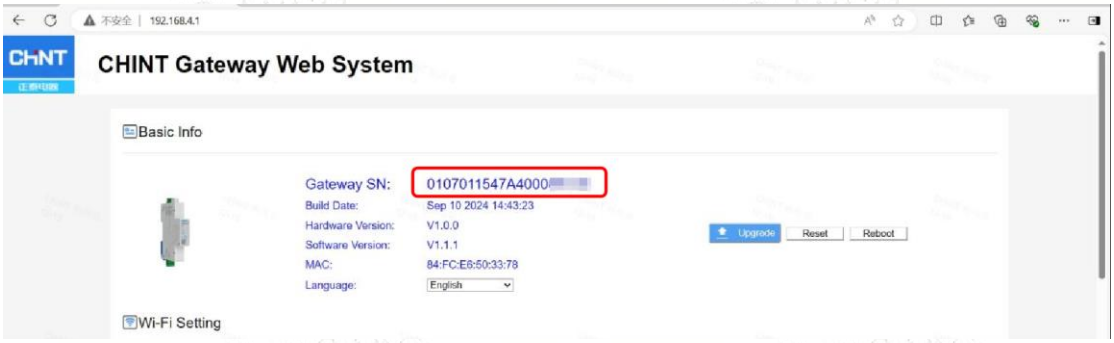
5. Configuring the gateway

5.1 Connecting to the gateway hotspot

The gateway will turn on the hotspot named "SMG-OPEN-XXXX" in the factory state, and you can connect to the gateway hotspot through PC Wi-Fi. If you are not sure about the current working status of the gateway, you can press and hold the gateway button for 15 seconds and then release it (15 seconds will be reached when both the gateway work and IoT light are always on), then the gateway will restore to the factory status and reboot after releasing the button. After reboot, the gateway will turn on the hotspot with the name "SMG-OPEN-XXXX" by default, XXXX varies with the device.

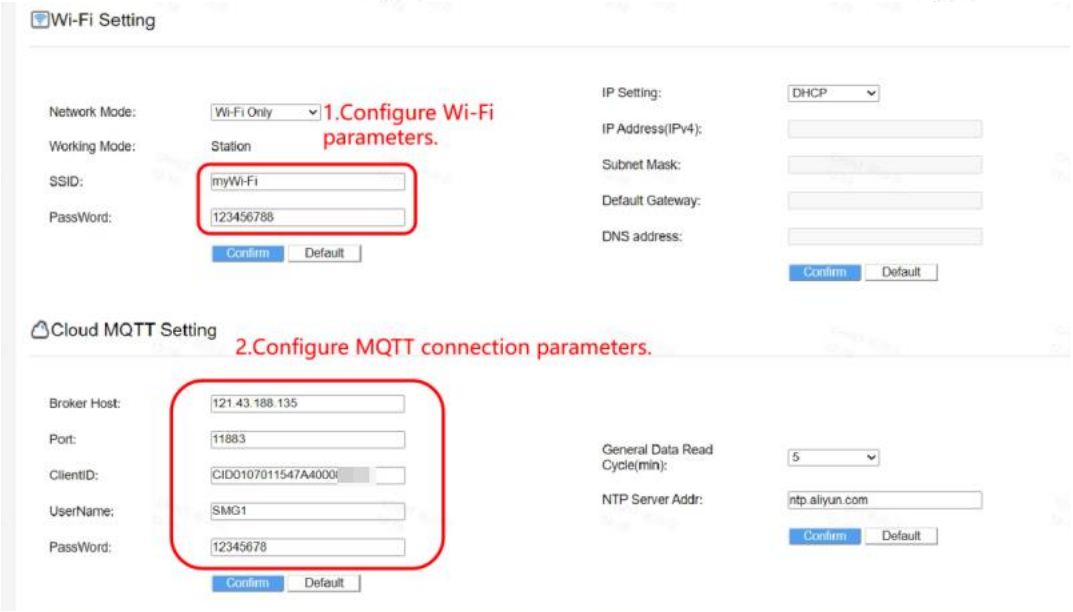
5.2 Accessing the Gateway Web

After connecting to the gateway hotspot via PC, you can type 192.168.4.1 in the PC browser and enter to see the built-in webpage of the gateway. Please record the gateway SN information for later use. The gateway SN is "0107011547A4000*****".



5.3 Configuring Gateway Network and Server Information

Here you need to configure the Wi-Fi information of the gateway connection and the MQTT server information of the gateway connection. Please do not reboot if the configuration takes effect after reboot

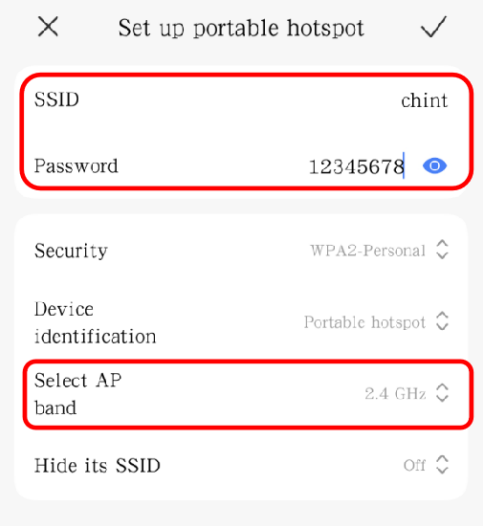


5.4 Self-organizing network with circuit breakers

Click "Auto Net" to start networking, and the gateway will restart automatically at the end of networking. After restarting, you need to press the gateway button, at this time, the gateway work light flashes to speed up, the gateway will open the hotspot, the hotspot name is "SMG-OPEN-XXXX", and then enter the built-in page of the gateway again, you can see the circuit breaker device which has completed the networking, the circuit breaker device SN is 0104035724060700****. Please record the SN of the circuit breaker, and use the SN of the circuit breaker in the future.

5.5 Turning on the mobile hotspot

After completing the above steps, please click the restart button in the webpage, after the gateway restarts, it will close the hotspot of the gateway itself and connect to the configured target Wi-Fi, at this time, you need to turn on the cell phone hotspot to provide the Wi-Fi connection for the gateway, and the hotspot information is the same as that of the gateway configuration. In this paper, we configure the cell phone hotspot as "CHINT" and the password as "12345678".

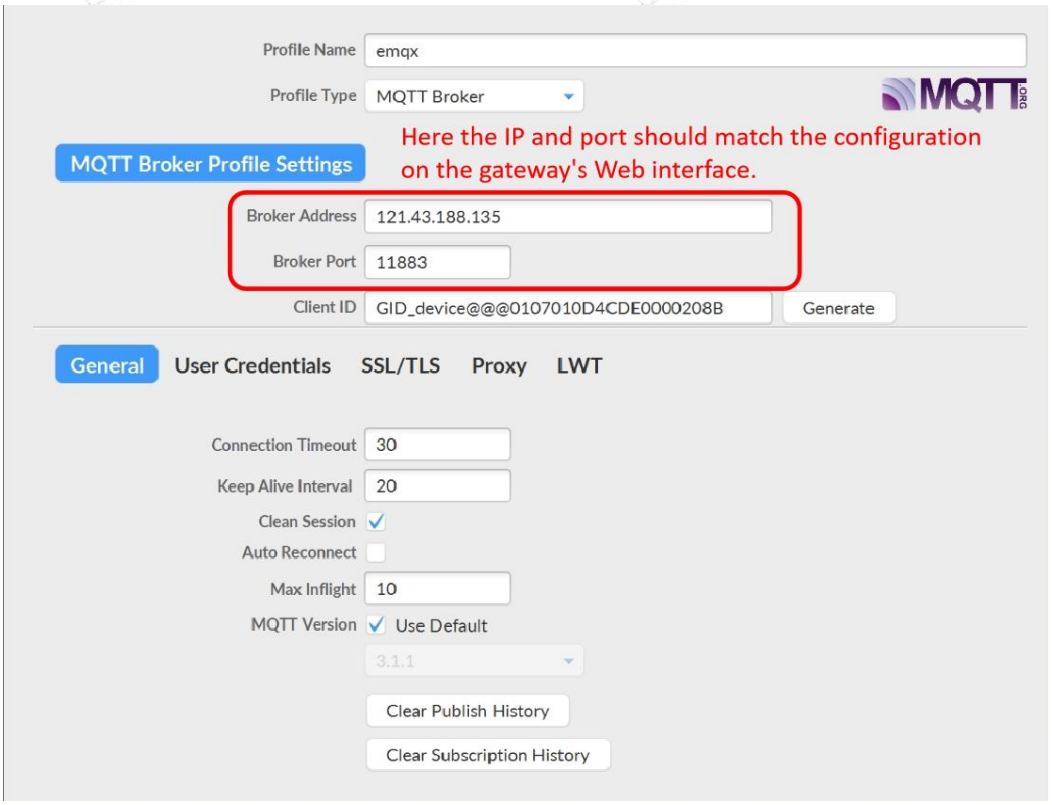


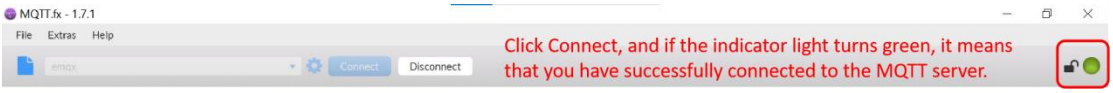
The Work light is blinking at 0.5Hz and the IoT light is blinking at 0.5Hz after the gateway is normally connected.

6. Data testing

Connect to the MQTT server through the MQTT client, subscribe to the gateway related topic in the MQTT client, and the gateway will report data every 5 minutes by default. Please refer to the documentation for the specific MQTT protocol.

6.1 MQTT client connecting to an MQTT server

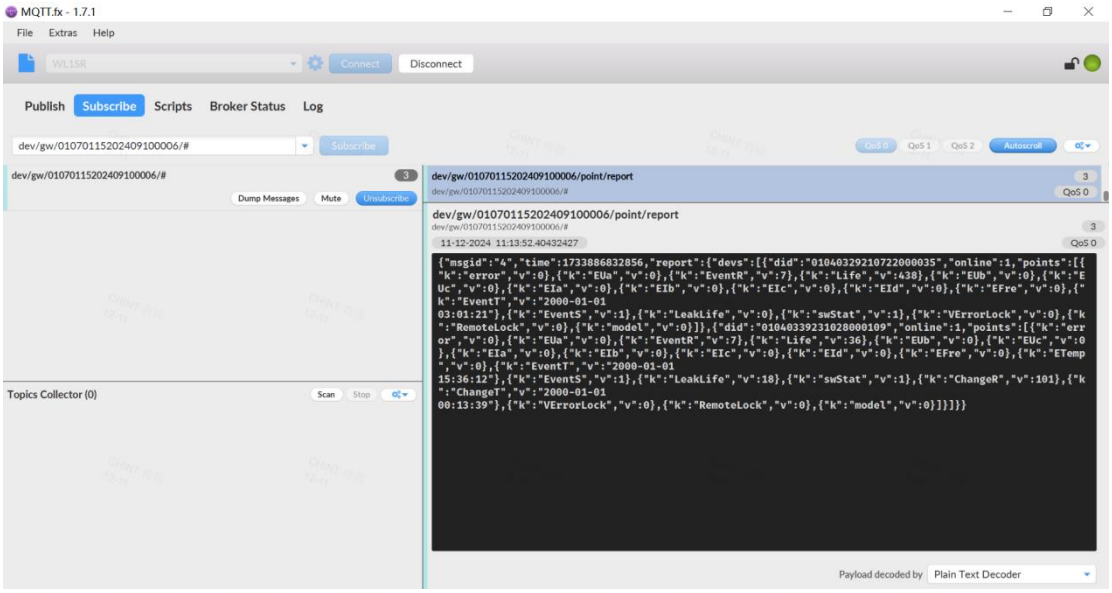




6.2 The MQTT client receives the data reported by the gateway

Subscribe to topic: /dev/gw/010701152024********/#

Please replace 010701152024******** with your own gateway SN when verifying. Wait for 5 minutes to receive the circuit breaker data collected by the gateway. In the uploaded data, k and v represent key and value respectively.



6.3 The MQTT client sends a split-close command to the gateway that

Split-gate topic, payload and operation are illustrated as follows.

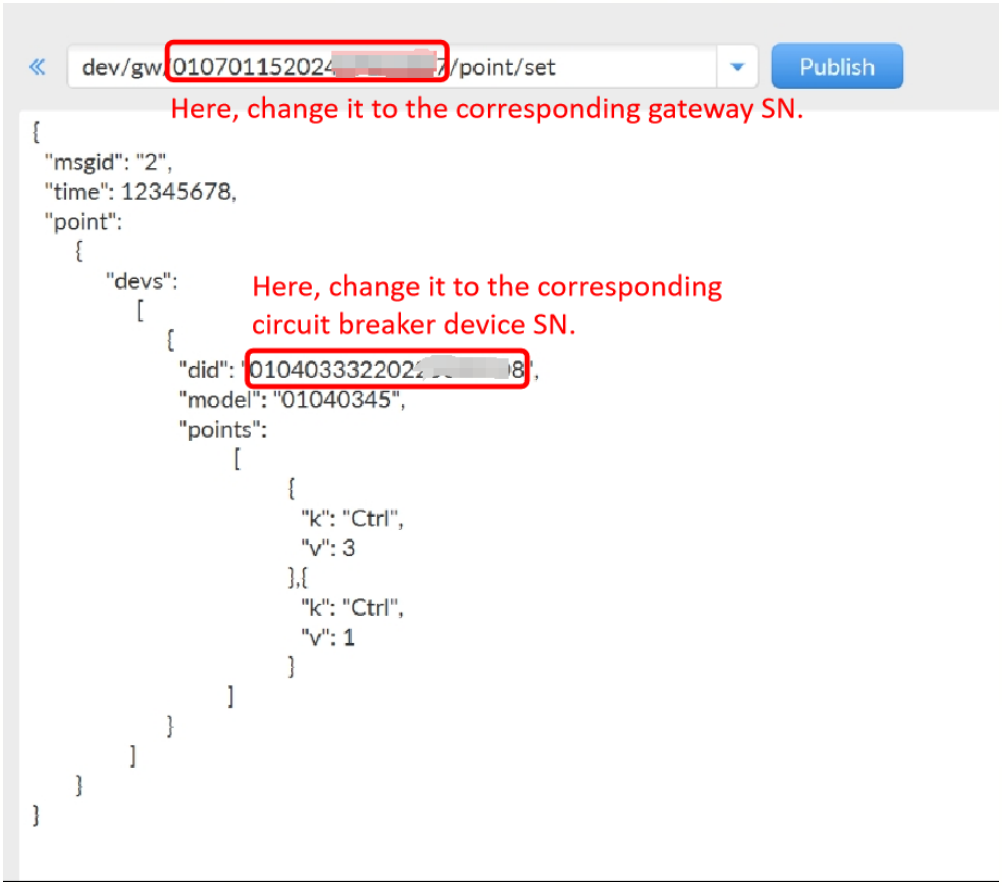
C

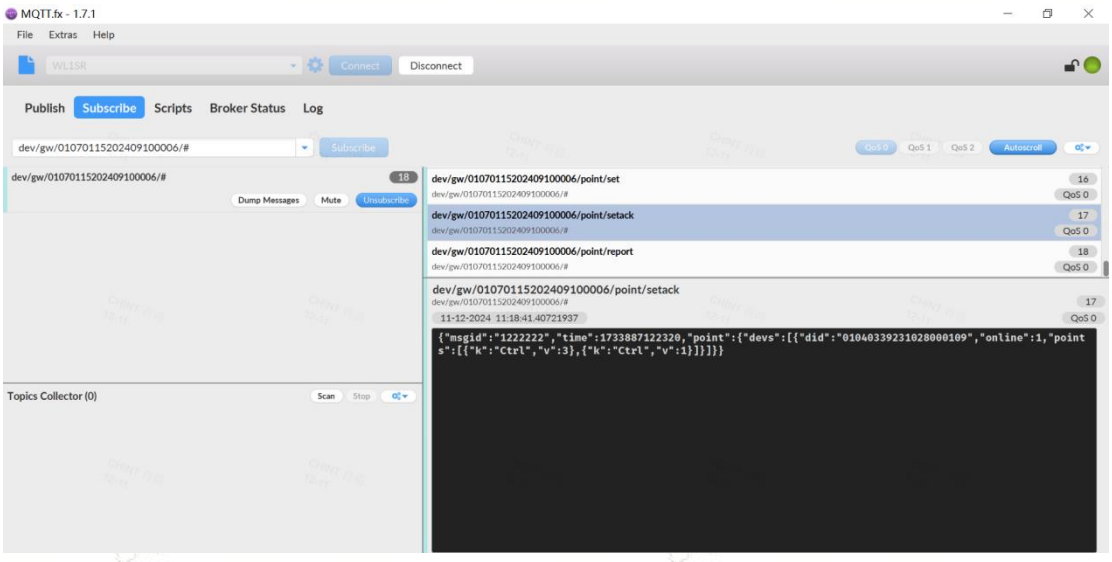
topic：dev/gw/010701152024********/point/set

payload：

```
{
    "msgid": "1222222",
    "time": 1234345454,
    "point" : {
        "devs": [
            {
                "did": "010403392310********",
                "points": [
                    {"k": "Ctrl", "v" : 3},
```

```
                    {"k": "Ctrl", "v" : 1}
                ]
            }
        ]
    }
}
```





The closing topic, payload, and operation are illustrated as follows.

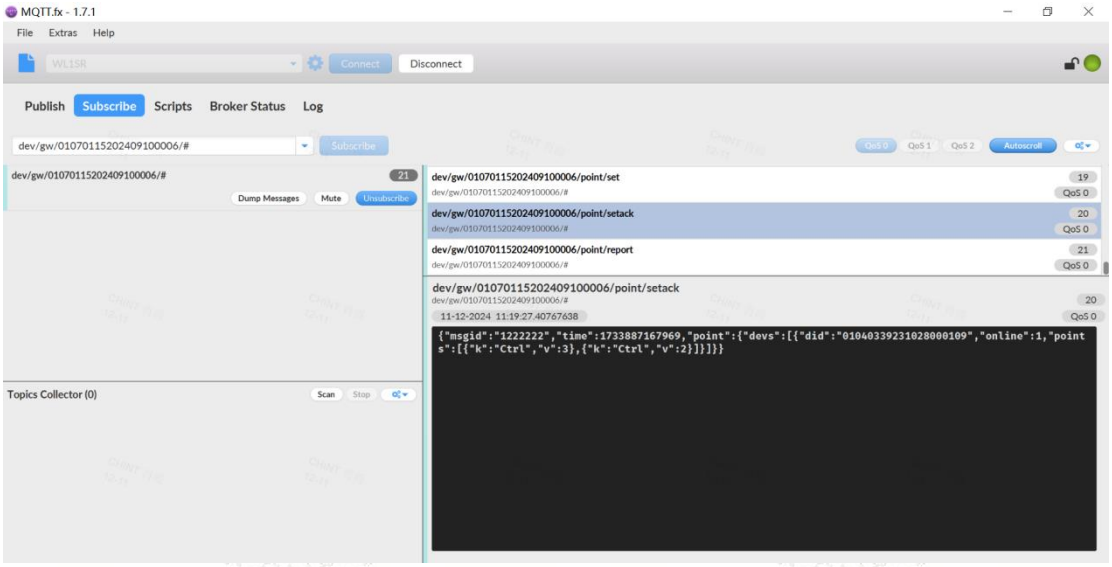
C

topic： dev/gw/010701152024********/point/set

payload：

```
{
    "msgid": "1222222",
    "time": 1234345454,
    "point" : {
        "devs": [
            {
                "did": "010403392310********",
                "points": [
                    {"k": "Ctrl", "v" : 3},
                    {"k": "Ctrl", "v" : 2}
                ]
            }
        ]
    }
}
```

After successful control, you will receive the answer data with topic dev/gw/010701152024********/point/setack.



Doro Tang 6671