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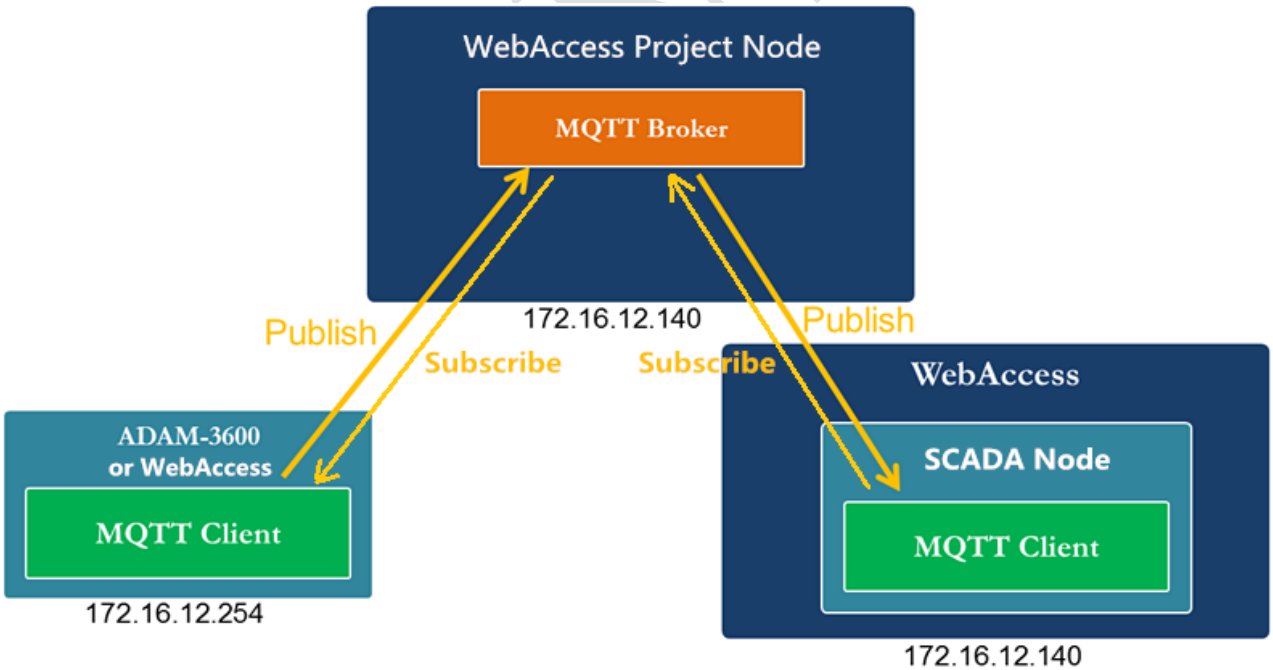
Date	2021/7/6	**SR#**	1-3358288537
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	How to set up ECU-1051 or WebAccess 9.0.3 MQTT connection with WebAccess Broker		
Keyword	WebAccess 9.0.3, Cloud, Upload, Broker		
Related Product	ADAM-3600, ECU-1051, ECU-1251, ECU-1152		

■ Problem Description:

This document explains how to set up ECU-1051 MQTT or WebAccess connection with WebAccess. After users configure Broker connection attributes, receive service attributes, tags to upload, upload conditions and other attributes, the data of the field device can be connected to the WebAccess via ECU-1051 or WebAccess in the way of MQTT.

■ Answer:

The topology of EdgeLink or WebAccess MQTT Client connecting with WebAccess MQTT Broker is illustrated as below drawing.



The setup procedure can be divided into 3 parts, and each step would be instructed in the following pages.

The first part is WebAccess Broker setup, which would be explained in step 1 and 2.

The second part is WebAccess MQTT Client setup, which would be explained in step 3 to 8.

The third part is ECU-1051 MQTT Client setup, which would be explained in step 9 to 10.

If you use WebAccess as a lower machine, you should do the following steps. The first part is WebAccess Broker setup, which would be explained in step 1 and 2.

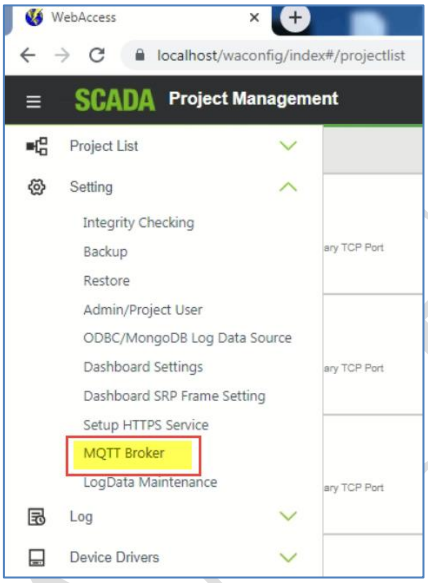
The second part is WebAccess MQTT Client (Use WebAccess as a gateway or device) setup, step 11 and step 12 need to be added in the normally collected project.

WebAccess MQTT Client which subscribing from Broker does not need to do any engineering configuration. After WebAccess MQTT Client (Data sending) is downloaded, it will automatically build a collection project in WebAccess MQTT Client.

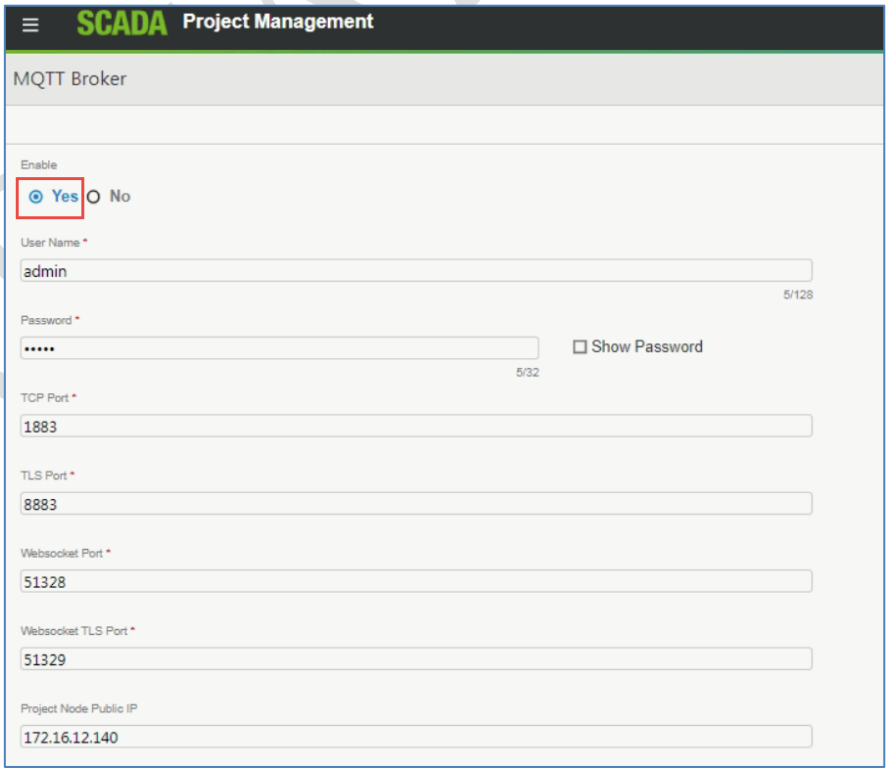
Prerequisite: Install **WebAccess 8.3 2017/12/15** and later version to use MQTT Broker.

WebAccess Broker Setup

1. Click MQTT Broker in the homepage of WebAccess.



2. Enable MQTT Broker with option “Yes”.



2.1 Set up the “UserName” and “Password” defined by the user for the broker.

2.2 Set up port number for broker’s “TCP Port”. Usually use port 1883 as non-security TCP

port.

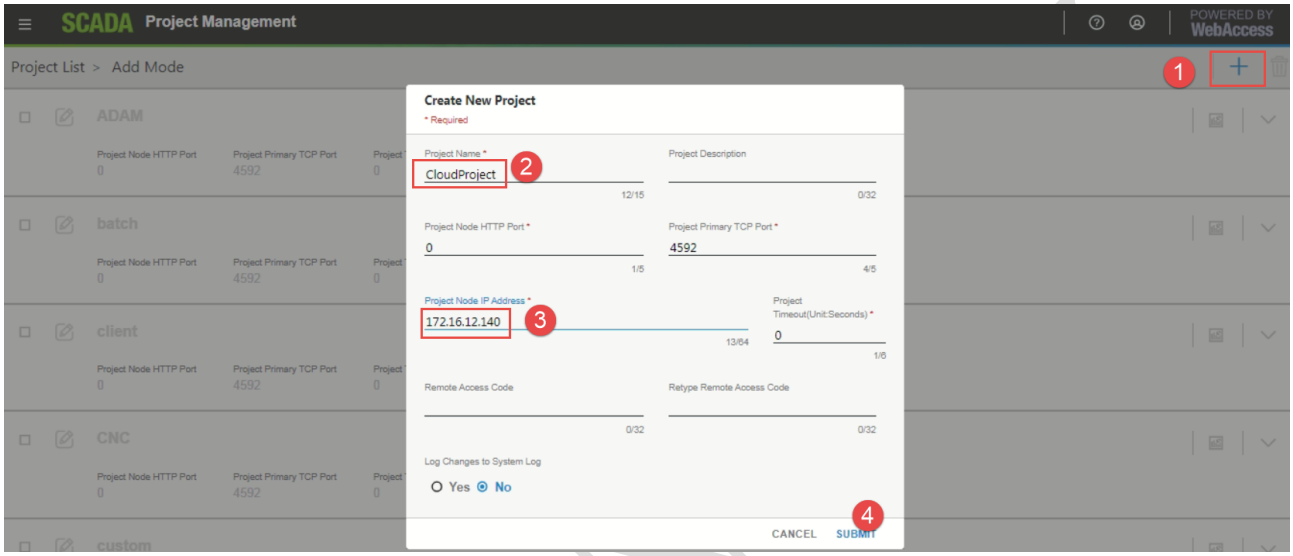
2.3 Fill in the “IP” (or domain name) of the server which would play as WebAccess Broker.

2.4 After clicking “Submit”, the WebAccess MQTT Broker is supposed to start and ready to service.

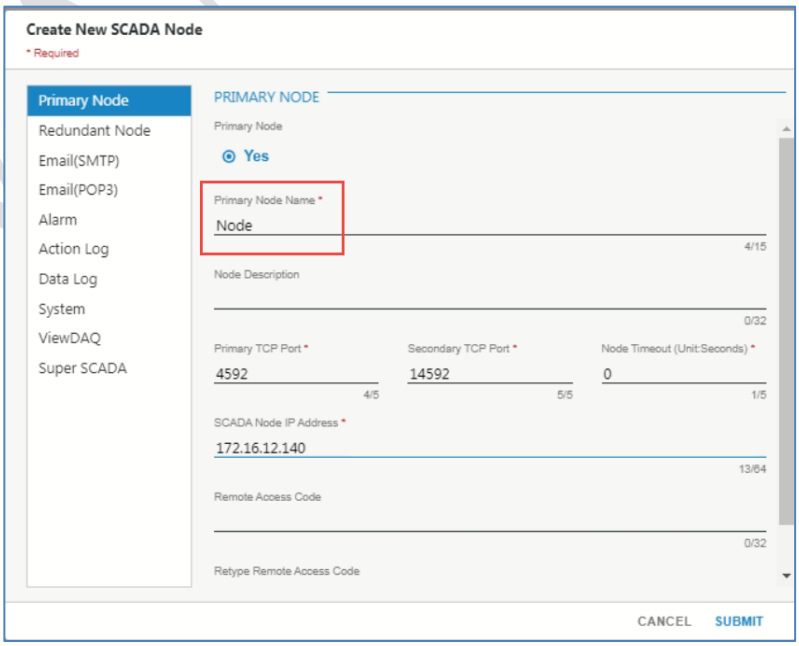
WebAccess MQTT Client Setup (SCADA node subscribes messages from broker)

The user can use the same machine to set up MQTT Broker and Client.

3. Choose one project in the WebAccess homepage. (Ex. CloudProject)



4. Add one SCADA Node. (Ex. Node)

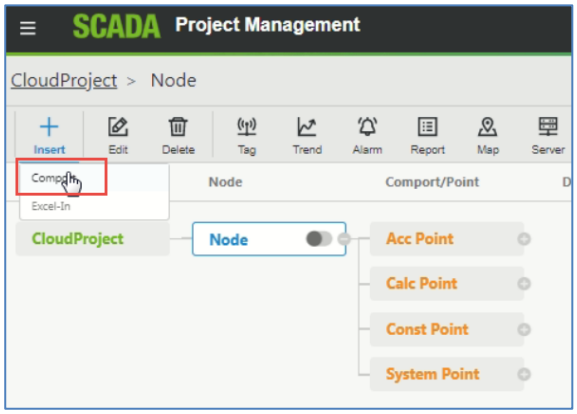


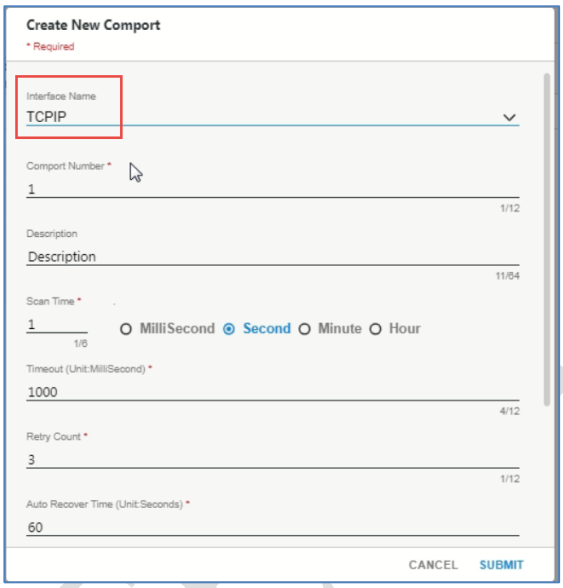
If the device supports MQTT client publishing with **WebAccess Plug&Play** function, the following steps may not be needed in WebAccess MQTT client. However, since ECU-1051 cannot support **WebAccess Plug&Play** in this period of time, we need to set up the device and tags manually in step 6 to 9.

In other words, **WebAccess Plug&Play** allows users no need to set up device and tags and

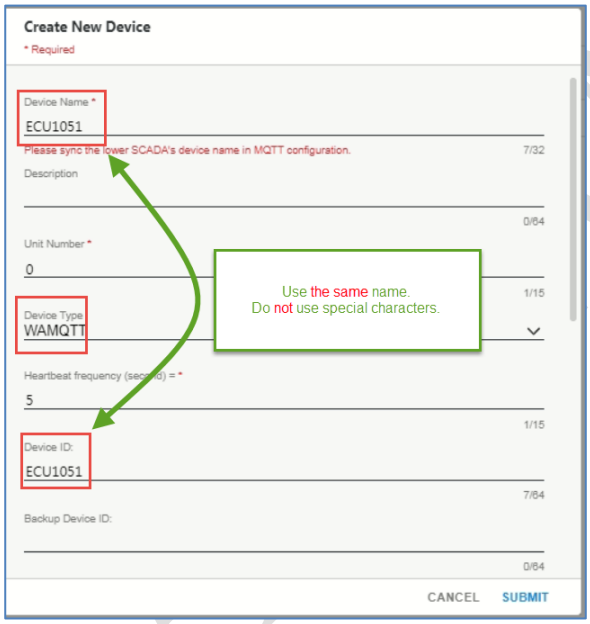
would generate corresponding device and tags if it receives MQTT packets from the subscribed broker.

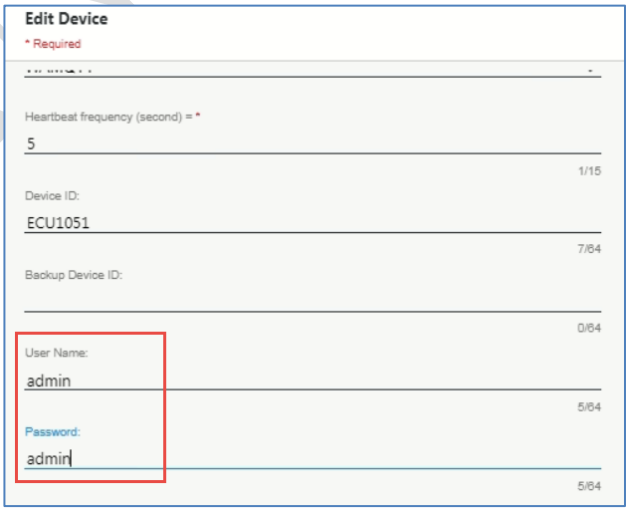
5. Add New Comport as TCPIP Interface.

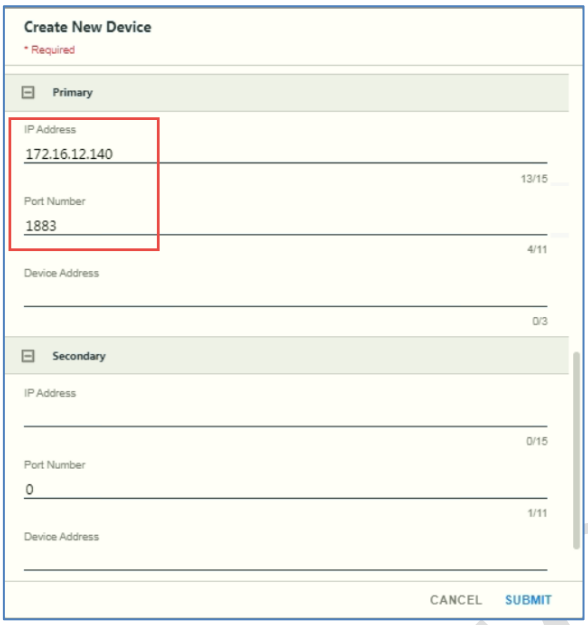




6. Add Device with WAMQTT Device Type.







Device Name: It's for recognition different devices in WebAccess.

IP address: Fill in the IP of Broker.

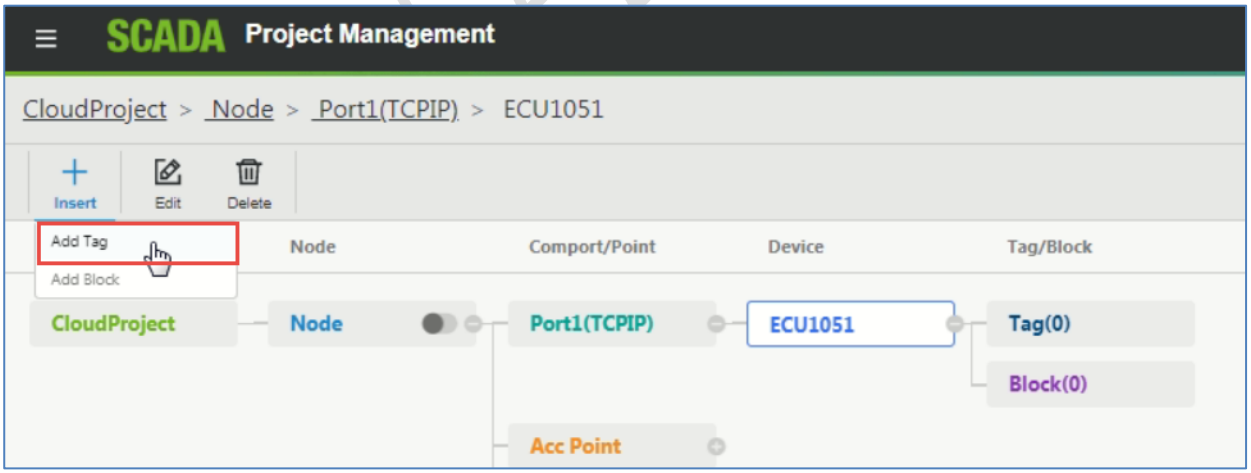
Port Number: Fill in the port number of Broker.

Heartbeat frequency (second): The device send heart beat message to the Broker with this period. After several times checking the communication status without heartbeat from the device, the Broker will view this device as disconnected.

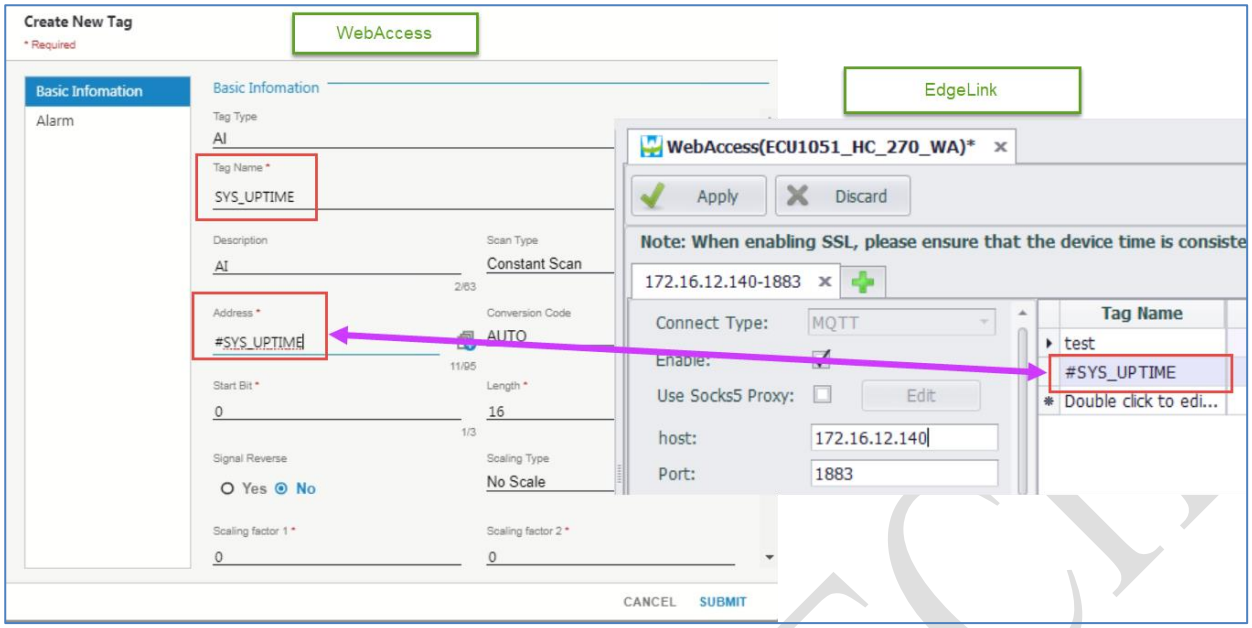
Device ID: Set the "Device ID" same as in EdgeLink project, which indicates the name of uploading topic. Do not use special characters, such as _ , - %.

Username and password: Broker's username and password.

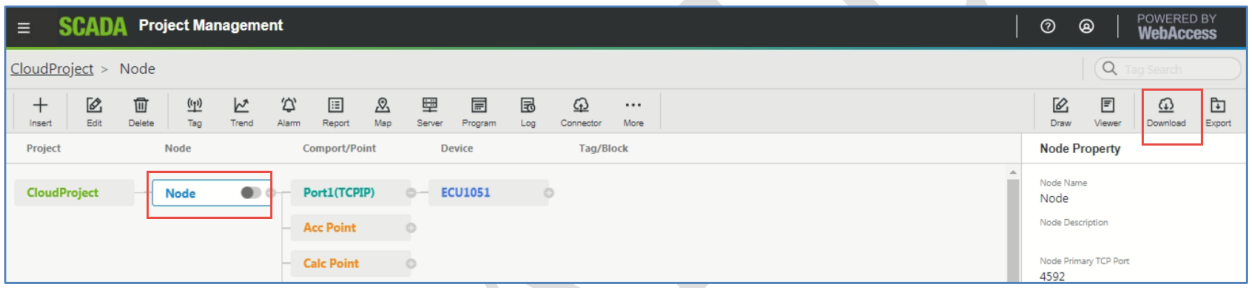
7. Add Tag in the device.

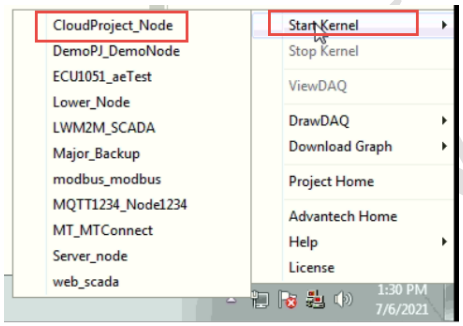


8. Create New Tag with the monitored Tag Name and Address in the device.



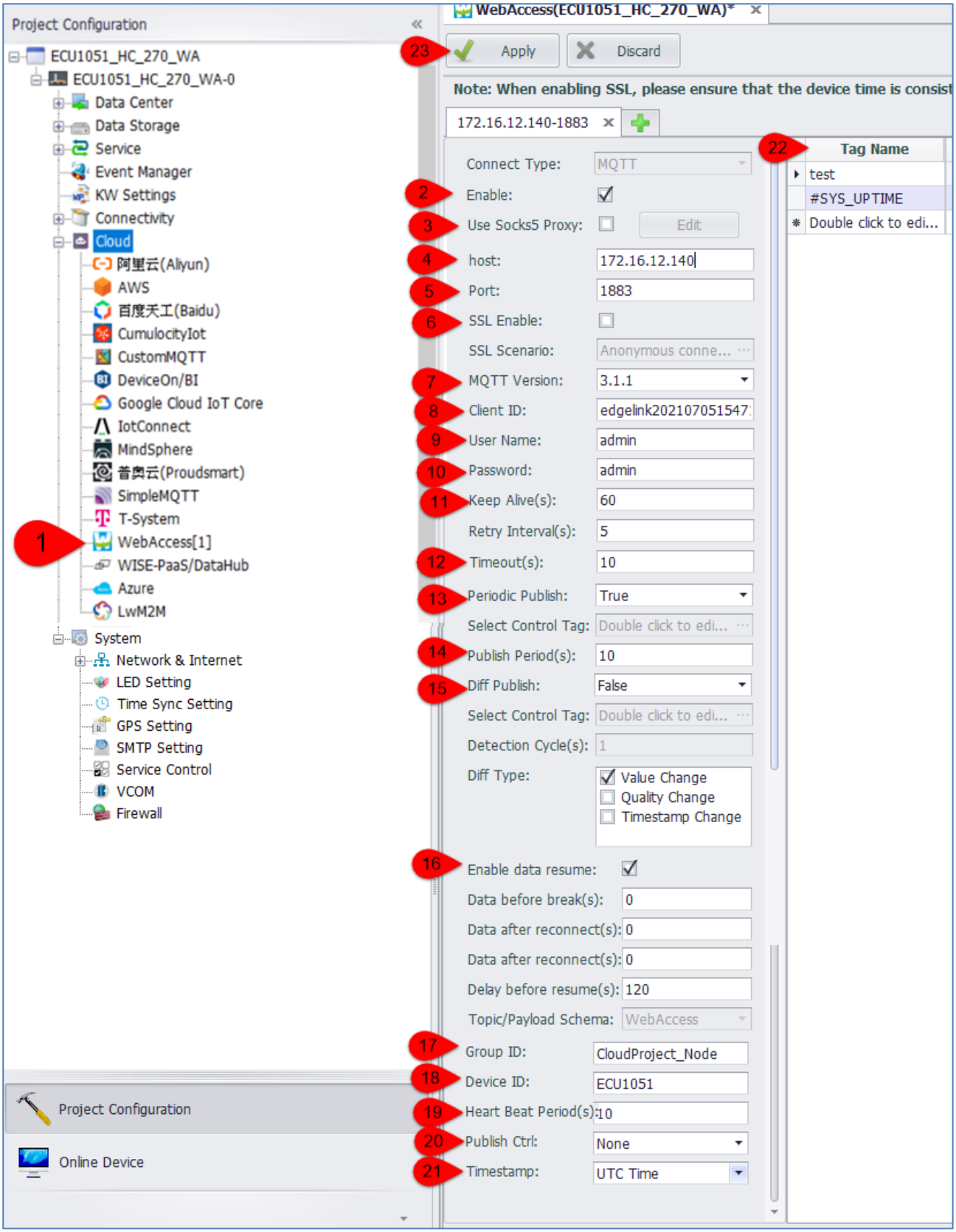
After download and run the Node, you may receive the tag value if the device publishes to the WebAccess Broker.





ECU-1051 MQTT Client setup

9. Set up EdgeLink project for ECU-1051, which is one MQTT client.



9.1 Choose “WebAccess” in the categories of cloud service.

9.2 In EdgeLink Cloud setting, enable WebAccess Cloud.

9.3 Leave it disabled as default if you don't use SOCKS5 proxy server. If user wants to enable it, click the Enable selection box and click the "Edit" button to set the SOCKS server information in the pop-up box, including the server IP address, port number, user name and password information.

9.4 *"host":* Fill the Broker's IP or domain name.

9.5 *"Port":* Set the port number the same as WebAccess Broker's port.

9.6 Choose whether to enable SSL. Connection does not enable SSL secure connection by default. If click the Enable selection box to enable SSL, user can choose three authentication methods: Anonymous Connection, Server Authentication, and Mutual Authentication. You can leave it unchecked as default if you don't need authentication. Use default Anonymous connection if the cloud and the client do not require certificate authentication.

9.7 Select the MQTT version number consistent with the cloud. For WebAccess 8.3 2017/12/15, which is MQTT 3.1.1 by default.

9.8 Fill in one Client ID following the spec of the broker. Randomly generated name is fine. MQTT 3.1.1 supports Anonymous Connection, so we can leave it empty as well.

9.9 "*Username*": Fill in WebAccess Broker's user name.

9.10 "*Password*": Fill in WebAccess Broker's password.

9.11 "*Keep Alive*": The client sends heartbeat messages (PING) to the broker with this timeframe to keep the connection alive with the broker.

9.12 "*Timeout*": The maximum interval in seconds for the client to establish connection with the broker. If the client has not received a response over time after sending a message to the broker, the client will interrupt the connection initiatively.

9.13 "*Periodic Publish*" is one option of uploading conditions. The client can choose to upload the tag's information regularly.

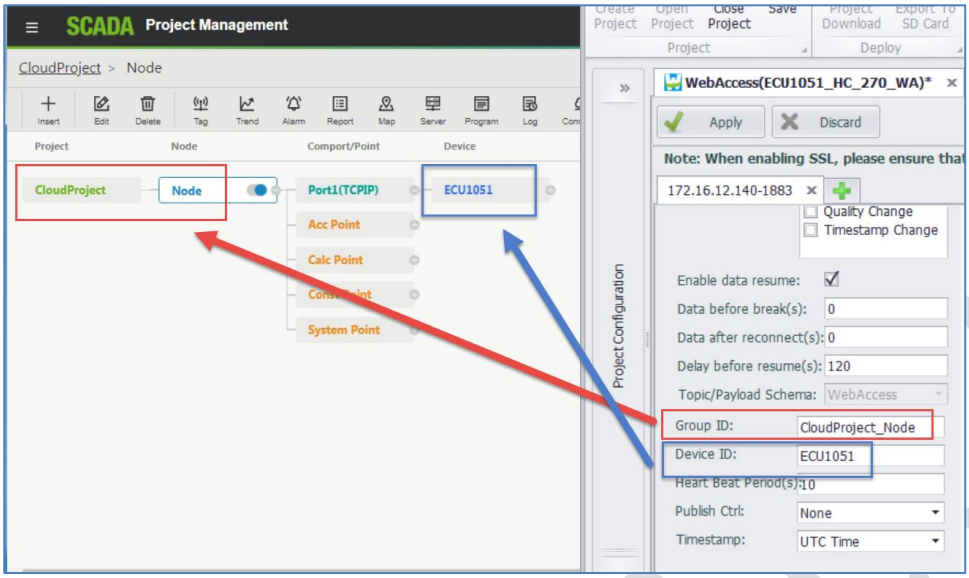
9.14 *"Publish Period"*: Set up the interval to publish data. For demonstration, check Periodic Publish and set Publish Period as 3 seconds.

9.15 *"Diff Publish"* is another option of uploading conditions. The client can choose to upload information when the tag changes. It checks the Tag status (value, communication quality, and timestamp) every Detection Cycle. Two uploading conditions can be selected at the same time.

9.16 *"Enable data resume"*: Enable this function to achieve the data resume after the Network connection is lost. Note that the "device address" in WebAccess should add with "/T". (Ex. #SYS_UPTIME/T)

9.17 *"Group ID"*: The project name and the node name in the WebAccess MQTT Client. (Example in this document: CloudProject_Node).

9.18 *"Device ID"*: Fill in the device name, which is the same as the "Device ID" in the device property of the WebAccess MQTT Client. (Example in this document: ECU1051).



9.19 *"Heart Beat Period"*: The interval of EdgeLink sends heart beat message to WebAccess MQTT Client.

9.20 "*Publish Ctrl*": If enable "Publish Ctrl", WebAccess Node can control EdgeLink device to publish or not by using "DON/DOF" command.

9.21 *"Timestamp"*: Choose the published message contains timestamp with UTC or local time.

9.22 You may create some tags for observation. In Cloud setting, add Tag by Double click the column and select the tag you created.

9.23 Click **Apply** for saving the setting.

10. Download the project to your ECU-1051 device. After downloading, the MQTT service would restart automatically.

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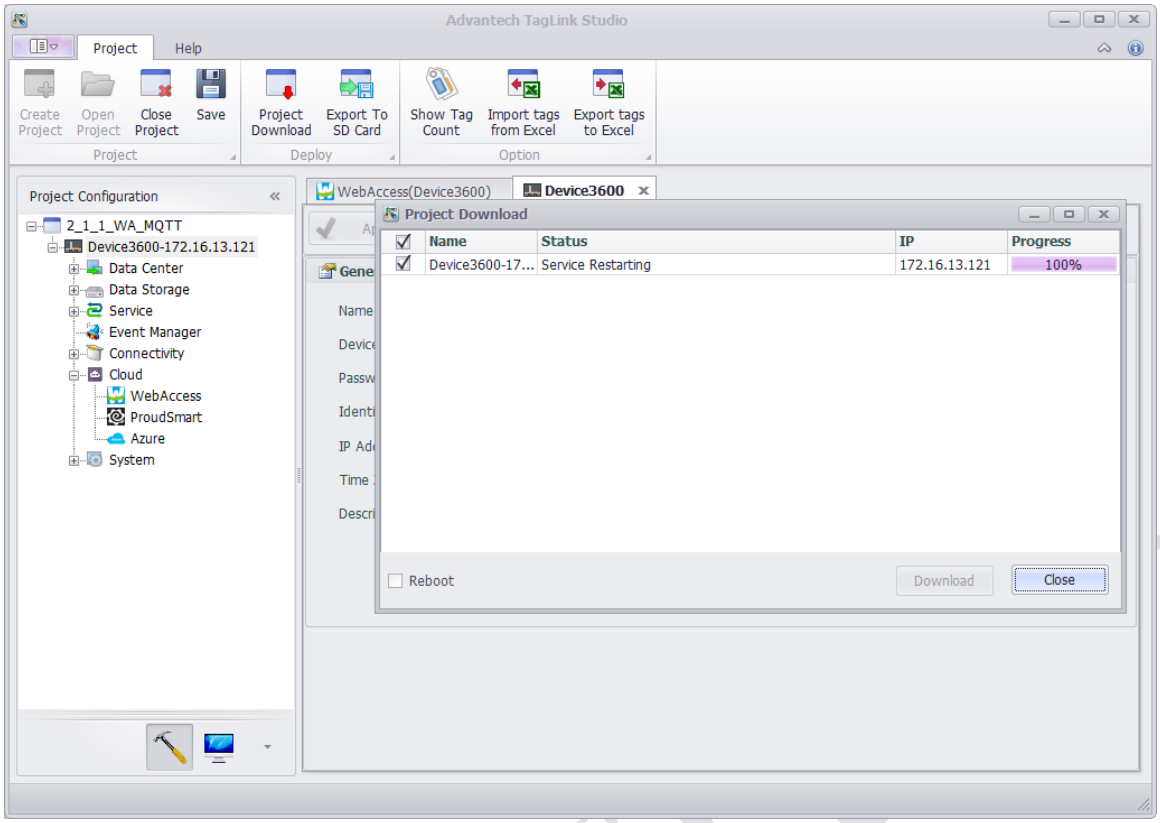
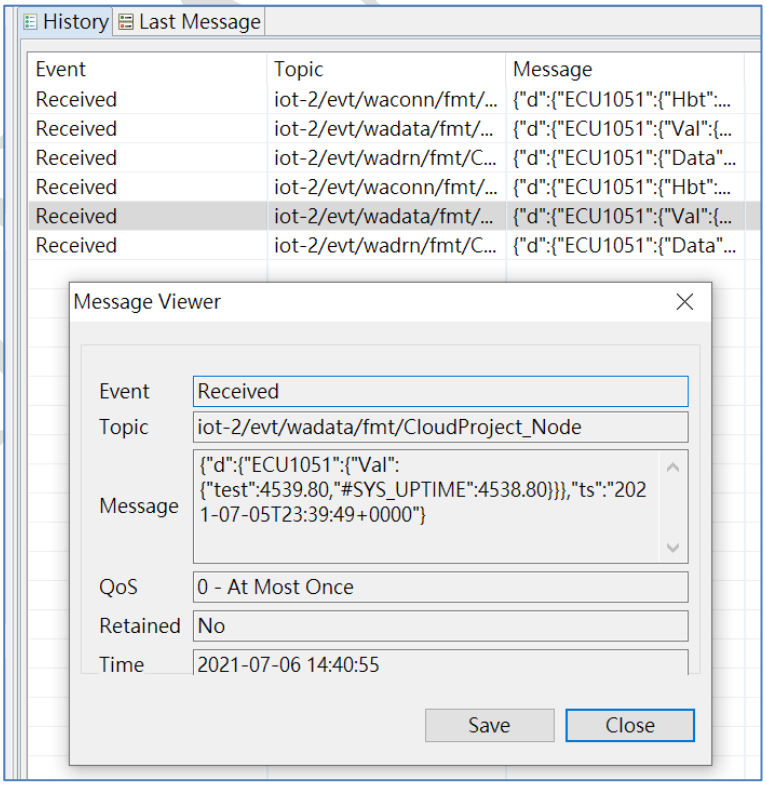
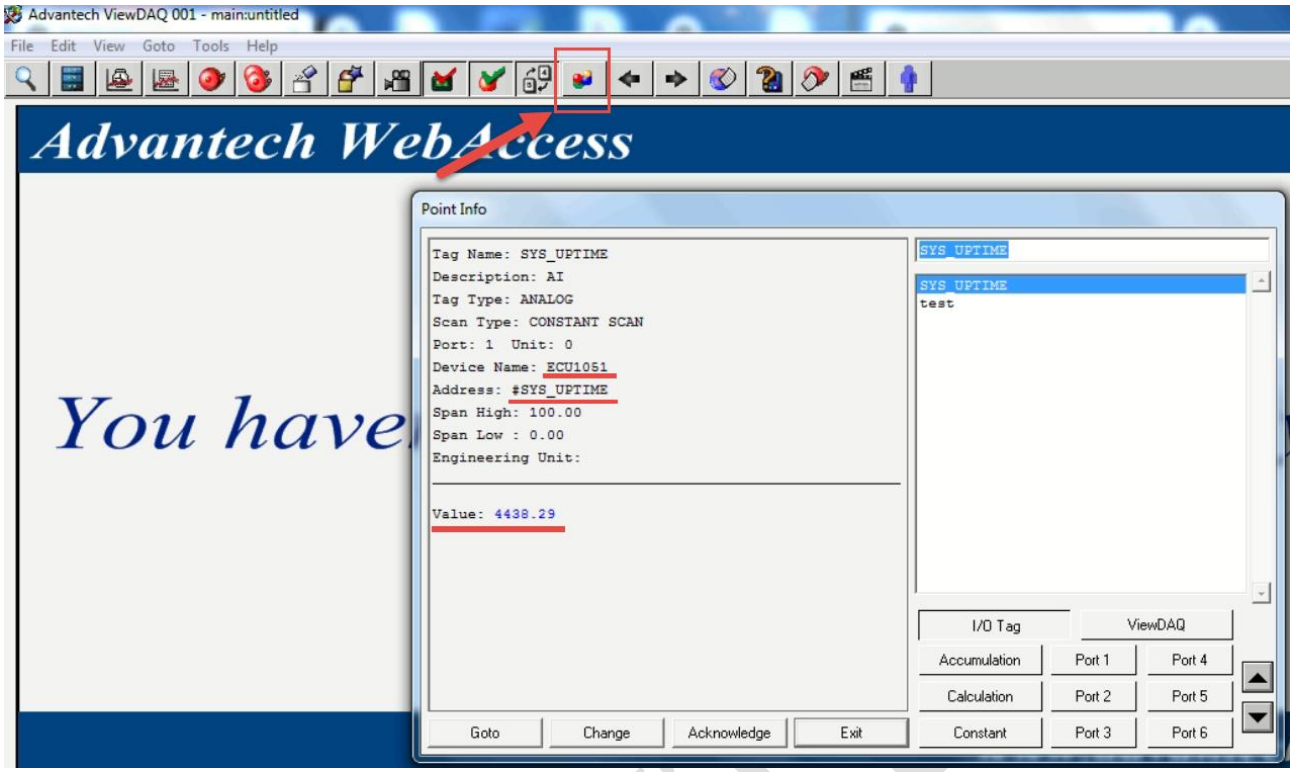


After finishing above settings, the ECU-1051 MQTT Client may publish to WebAccess Broker, and you may monitor it on another WebAccess Node as MQTT Client.

You may also use other 3rd party MQTT client software (ex. Paho) to subscribe the WebAccess MQTT broker and check the published result of ECU-1051.



You may also view the upload result in ViewDAQ of WebAccess.



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