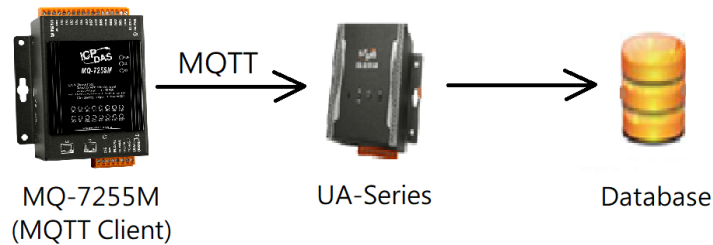


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FAQ-DBL-08: UA Web UI Function Wizard – Data Log -

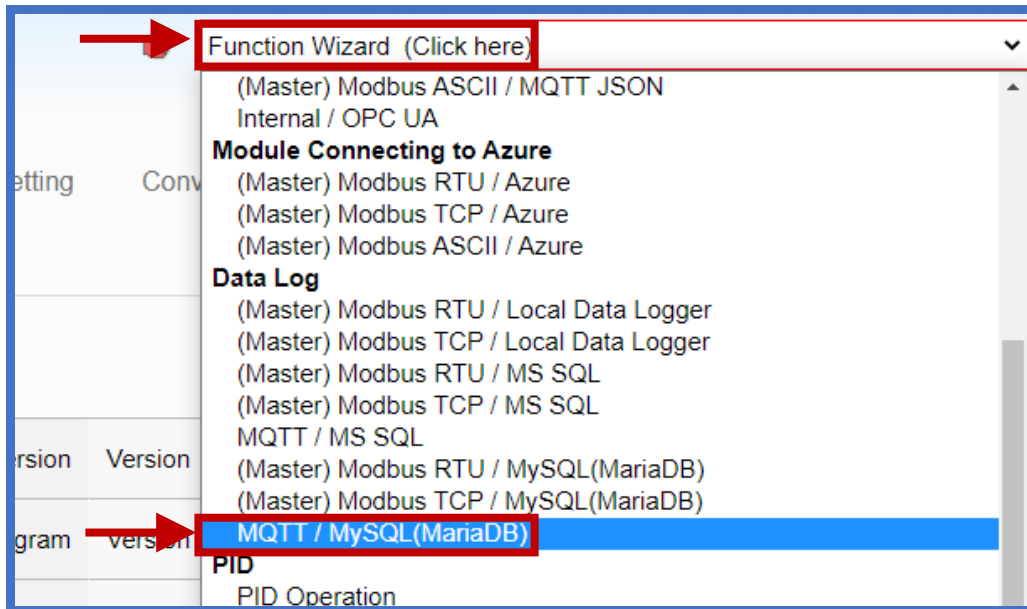
How to set up remote database function: MQTT / MySQL(MariaDB) ? (Use MQ-7255M)

This Function uses UA series to receive MQTT messages, and then write to MySQL or MariaDB database. The architecture is as following:

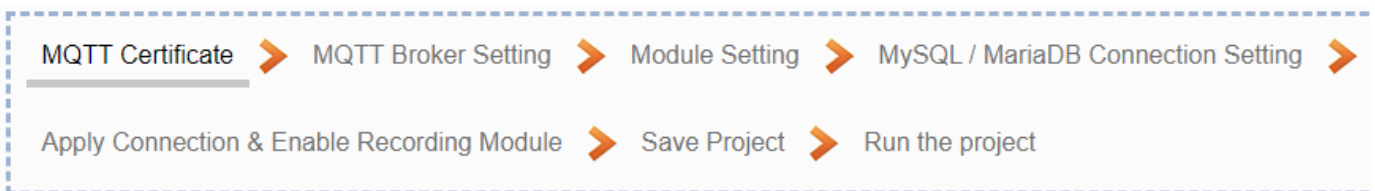


1. The Steps to set up the Project

Enter the UA Series Web UI, Click [MQTT / MySQL(MariaDB)] in the [Function Wizard] at the top right.

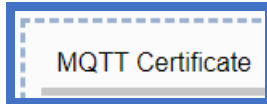


After Clicking [MQTT / MySQL(MariaDB)], follow the Step Box to set up the project.



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- **(a) Enter [MQTT Certificate]** (Skip this step if no encryption is required)



Confirm the **authentication setting of the remote Broker** is one-way or two-way:

If the remote Broker setting is **one-way authentication**, upload the **trust certificate of the remote Broker** on this setting page.

If the remote Broker setting is **two-way authentication**, upload the **trust certificate of the remote Broker**, the **certificate of the UA series**, and the **private key of the UA series** on this setting page.

MQTT Client

Remove the File

Trusted Certificate	<input type="button" value="Remove"/>
Certificate	<input type="button" value="Remove"/>
Private Key	<input type="button" value="Remove"/>

Upload the file to the controller

Trusted Certificate	<input type="button" value="Select File"/> <input type="text"/>	<input type="button" value="Upload"/>
Certificate	<input type="button" value="Select File"/> <input type="text"/>	<input type="button" value="Upload"/>
Private Key	<input type="button" value="Select File"/> <input type="text"/>	<input type="button" value="Upload"/>

1. Get the trusted certificates from MQTT Client and save in the PC.
2. In the [MQTT Client] > [Upload the file to the controller], click the button [Select File] to select the file of the Trusted Certificate, Certificate or Private Key.
3. Click the button [Upload].

Notes for MQTT Client Certificate:

- The supported **code format**: "PEM".
- The supported file extension name for **Certificates**: " *.pem / *.cer / *.cert " .
- The supported file extension name for **Private Key**: " *.key " .

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- (b) Click [MQTT Broker Setting]



In MQTT Connection, select [Local Broker] or [Remote Broker] of the left menu.

Local Broker

The UA series has a built-in MQTT Broker service. When using MQTT communication, there is no need to build a Broker system.

Set up according to the user case situation (if there is no encryption need, please uncheck the SSL/TLS option), and click [Save].

The screenshot displays the 'IoT Platform Setting' interface. The 'Local Broker' option is selected in the left-hand menu and highlighted with a red box and an arrow. The main content area is titled 'Local Broker Setting' and contains the following configuration fields:

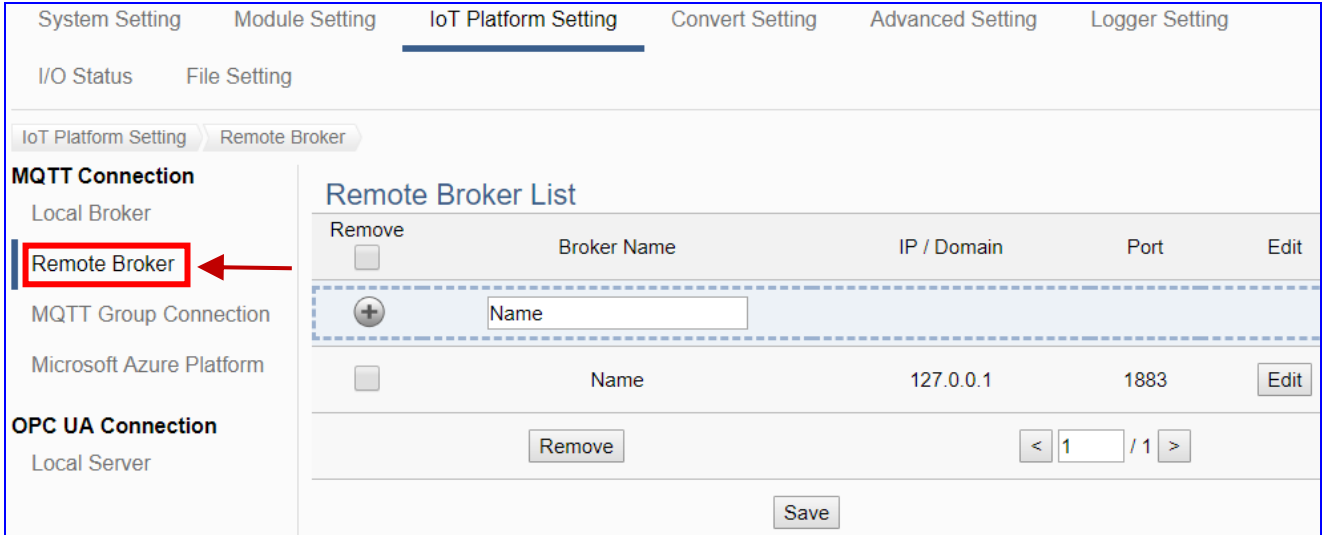
Port	1883
Anonymous Login	<input checked="" type="checkbox"/> Enabled
WebSocket	<input checked="" type="checkbox"/> Enabled
Port	9001
SSL/TLS	<input checked="" type="checkbox"/> Enabled
Port	8883
Certificate	Select File <input type="text"/> Upload
Private Key	Select File <input type="text"/> Upload

A 'Save' button is located at the bottom right of the configuration area.

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Remote Broker

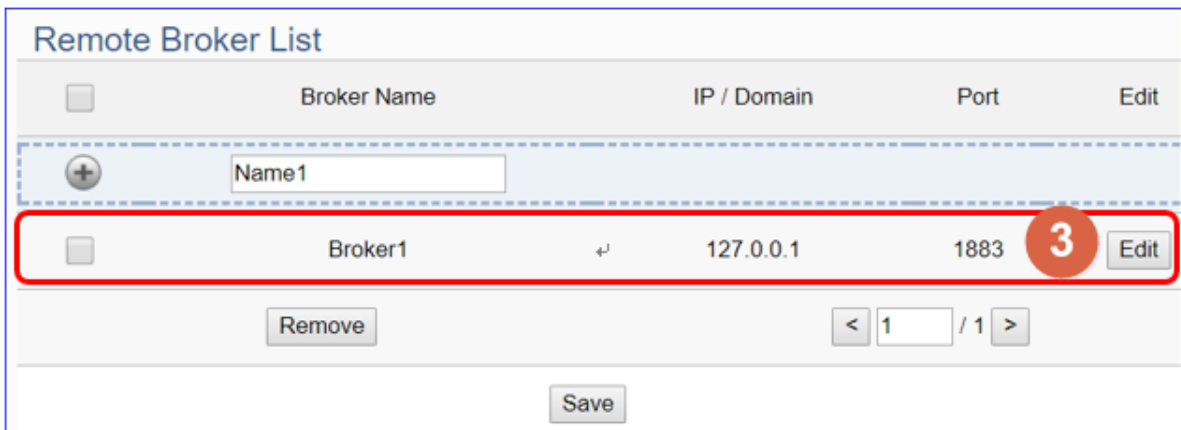
This function can set up the MQTT connection with the remote Broker. User can publish and subscribe messages to the remote Broker through this connection.



Add and set up a connection Broker name in the Remote Broker List.



After adding a list of the Remote Broker:



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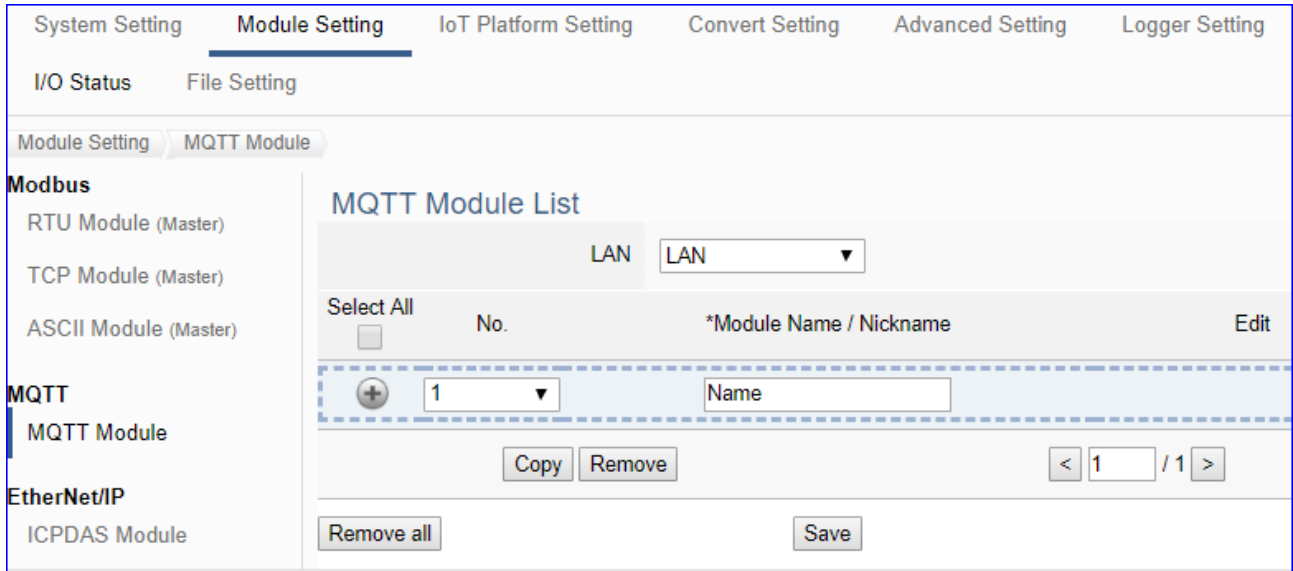
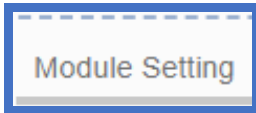
Click [Edit] to set up the group in the Broker Content Setting page. (if there is no encryption need, please uncheck the SSL/TLS option)

Broker Content Settings

Broker Name	<input type="text" value="Broker1"/>
IP / Domain	<input type="text" value="127.0.0.1"/>
Port	<input type="text" value="1883"/>
Keep Alive Time(second)	<input type="text" value="60"/>
SSL/TLS	<input checked="" type="checkbox"/> Enabled
Trusted Certificate	<input type="text" value=""/>
Certificate	<input type="text" value=""/>
Private Key	<input type="text" value=""/>
Anonymous Login	<input checked="" type="checkbox"/> Enabled

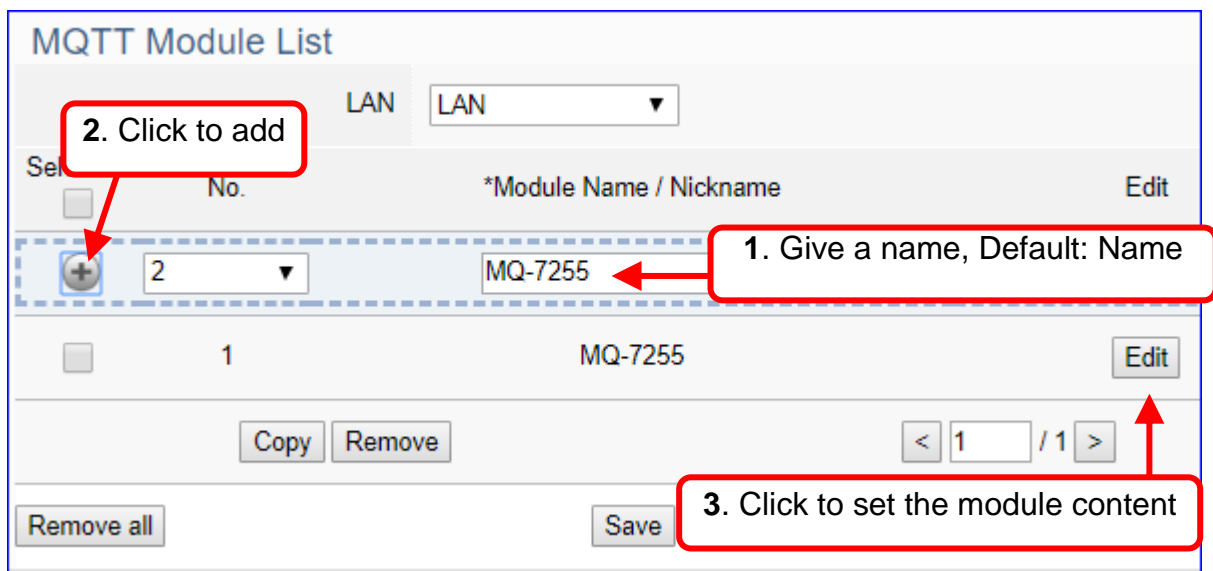
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● (c) Click [Module Setting]



Setting Steps:

1. Give the module name or nickname, e.g. MQ-7255, DL-302. Default: Name
2. Click the button [+] to add a new module
3. Click the button [Edit] to enter the Module Content Setting page
Set up the Modbus Mapping Table for the UA controller and module I/O channels



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Select the MQTT Connection.

MQTT Client Setting

No.	<input type="text" value="1"/>
Module Name	<input type="text" value="MQ-7255"/>
MQTT Connection	<input checked="" type="radio"/> Broker (Local) <input type="radio"/> Cloud1 (Remote)

MQTT Variable Setting: Add the variables of the attribute/type/number for your project. EX: 2 variables for this case.

MQTT Variable Setting

Attribute	<input type="text" value="Read"/>
Data Type	<input type="text" value="Bool"/>
Data Number	<input type="text" value="1"/>
Create Tables	<input type="button" value="Add"/>
Details	<input type="button" value="Show"/> <input type="button" value="Hide"/>

The completed table looks like the following image:

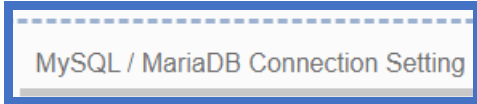
MQTT Variable Table

Remove Tables

	Name	Attribute	Data Type	Subscribe Topic	Publish Topic	Description
<input type="checkbox"/>	<input type="text" value="Tag1"/>	<input type="text" value="Read"/>	Bool	<input type="text" value="/MQTT_No.1_MQ-7255/Tag1/Subscribe"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text" value="Tag2"/>	<input type="text" value="Read"/>	Bool	<input type="text" value="/MQTT_No.1_MQ-7255/Tag2/Subscribe"/>	<input type="text"/>	<input type="text"/>

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• (d) Click [MySQL / MariaDB Connection Setting]



Add a database identification name (Ex: **ICPDAS_Cycle_DateTime**) as below, and then click [Edit] button to enter the “MySQL / MariaDB Content Setting” page.

click [Edit] button to enter the “MySQL / MariaDB Content Setting” page.

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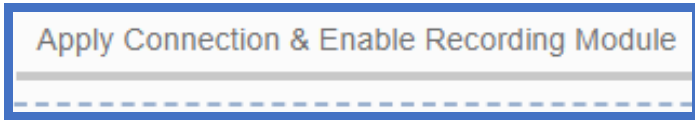
[MySQL / MariaDB Content Setting] can set up the database relational setting.

MySQL / MariaDB Connection Settings

Identification Name	<input type="text" value="ICPDAS_Cycle_DateTime"/>
Database Name	<input type="text" value="DatabaseName"/>
Table Name	<input type="text" value="TableName"/>
IP	<input type="text" value="127.0.0.1"/>
Port	<input type="text" value="3306"/>
Account	<input type="text" value="root"/>
Password	<input type="password" value="...."/>
Log Mode	<input type="text" value="Cycle"/> ▼
Interval Seconds	<input type="text" value="5"/>
Date Time Format	<input type="text" value="[yyyy-MM-dd], [HH:mm:ss]"/> ▼
Enable	<input checked="" type="checkbox"/>
Test Connection	<input type="button" value="Connection"/>

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- (e) Click [Apply Connection & Enable Recording Module]



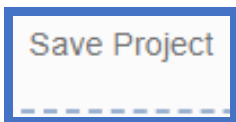
MQTT Module List

No.	*Module Name / Nickname	Edit	Database Name	All Enabled
1	MQ-7255	<input type="button" value="Edit"/>	ICPDAS_Cycle_DateTime 1	<input checked="" type="checkbox"/>

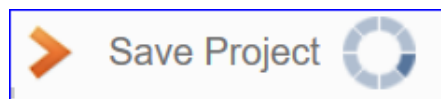
2

3

- (f) Click [Save Project]



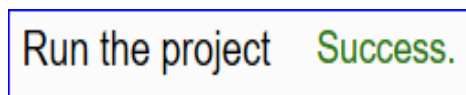
Click [**Save Project**], the Step Box will show an animation as below picture, that means the project is saving. When the animation vanished, the project is saved completely.



- (g) Click [Run the Project]



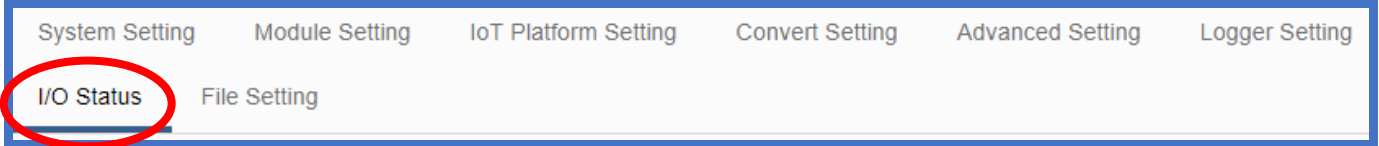
When the words "**Please wait**" disappears, the new words "**Success**" appears, that means the UA controller is running new project successfully.



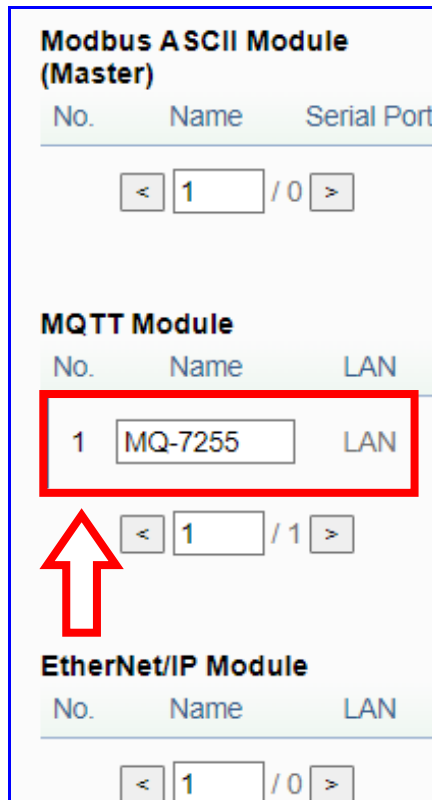
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● **2. Check the MQTT Real-Time Status**

Click the menu **[I/O Status]**.



Check the left menu [MQTT Module] and Click the module name you want to check.



The I/O Status will display the [MQTT Module] status. If the Broker connection success, the status will show [Good].

I/O Status			I/O	Scaling	Bitwise
Variable Name	Data Type	Value	Description	Status	
<input type="text" value="Tag1"/>	Bool	<input type="checkbox"/>	<input type="text"/>	Good	
<input type="text" value="Tag2"/>	Bool	<input type="checkbox"/>	<input type="text"/>	Good	

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