NOVAKON

HMI – Your Intelligent IIoT Gateway Solutions

iM-Connect®

Protocol Conversion Software User Guide

July, 2023

Version 1.03

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Directory

1. Log in to the Web 3
2. Interface Description 5
3. PLC Setting 8
4. Tag Setting 13
5. Data Logger 22
6. Alarm 26
7. MQTT 32
8. Edit Macro 41
9. OPCUA Client 46
10. Online Monitor 49
11. Project Setting 51
12. System Setting 52
12.1 System Information 52
12.2 Network Setup 54
12.3 Date and Time 55
12.4 Security Setting 56
12.5 Service Status 75
13. About 76
14. FAQ 77
15. Connection Setup Example 78
16. Software Upgrade Guide 83

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1. Log in to the Web

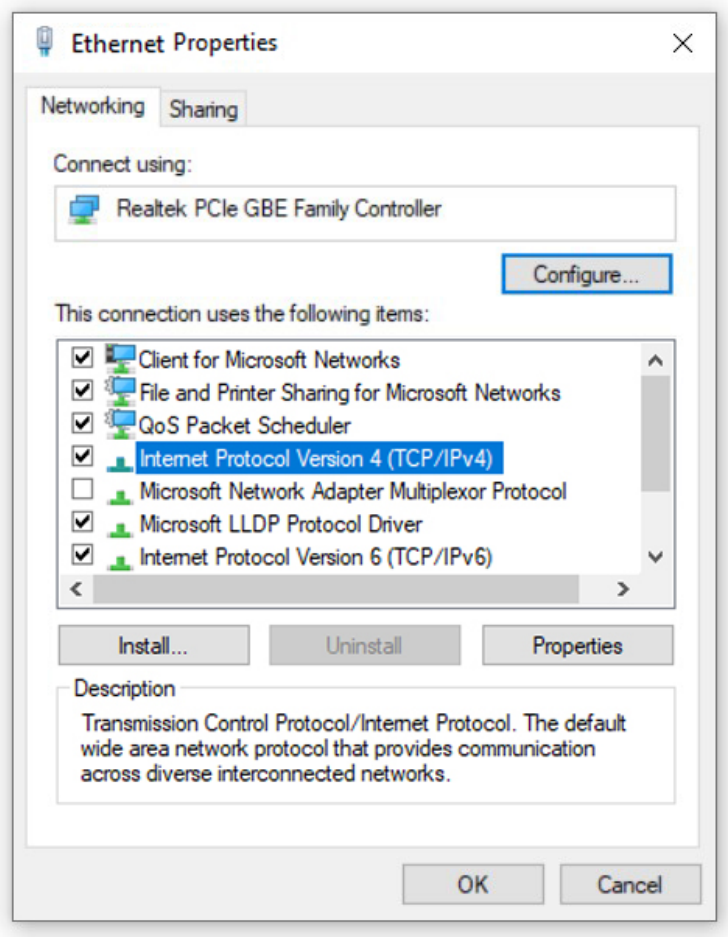
When you use GATEWAY for the first time, the default network port can be used to enter the web page for editing. The default interface is【LINK1】.

The IP address is set as【http：//192.168.0.80】or 【http：//im-connect.local】. Please do not change this IP address if not necessary.

A new IP address of 【LINK2】 can be set after entering the webpage if needed.

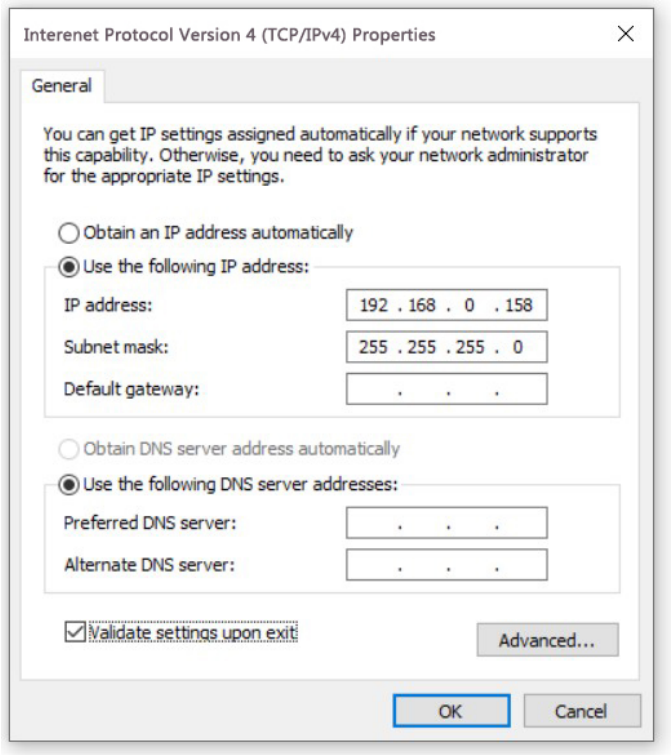
When you enter the web page for the first time, the home page of the company profile (About) is shown. With the change of the operation screen, the page that a user leaves at last time would be shown in the next visit.

The first step is to set the computer's IP to match the same network segment as GATEWAY. Then, in Internet settings, click on Ethernet Properties,【Internet Protocol Version 4 (TCP/IPv4) 】, and【Properties】.



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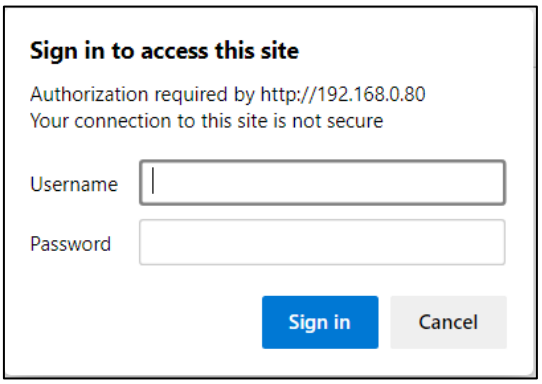
Next is to assign an IP address to the computer, which must be in the same network segment as GATEWAY. For example, the IP of GATEWAY is 192.168.0.80, and the computer can be set to 192.168.0.XXX as well. Both IPs have the same network segment but with different URLs.



Open the browser and enter the default URL :【http：//192.168.0.80】to enter the login page.

User name : 【admin】

Default password : 【1234】

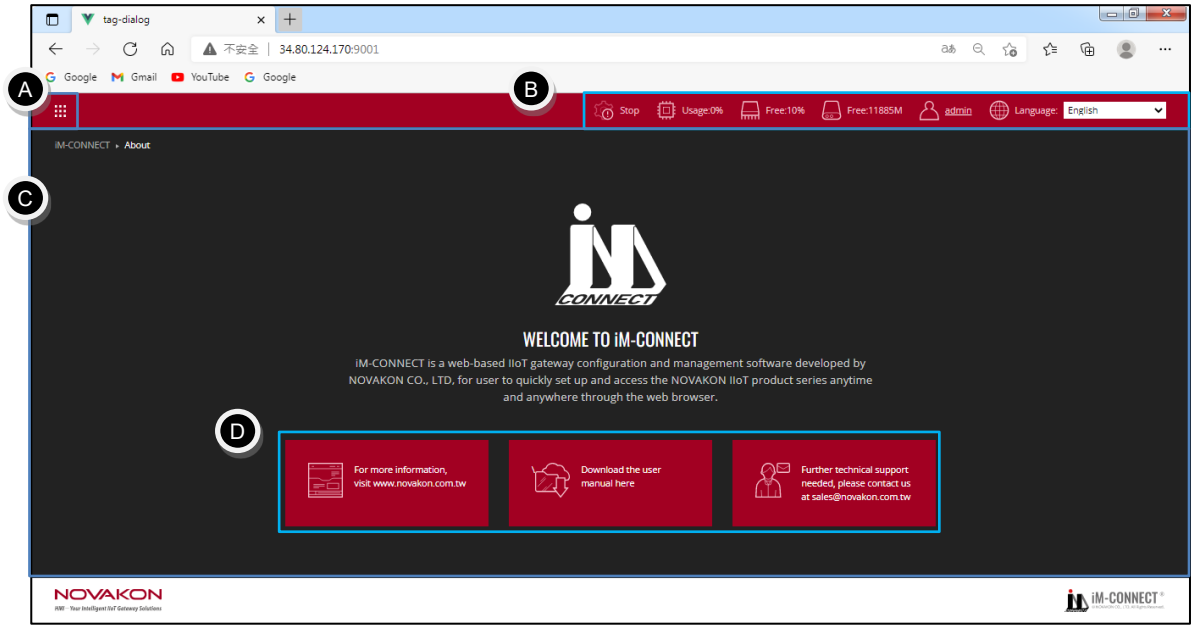


【Note】： When restarting the Gateway, one must wait at least 50 seconds before restarting the web page.

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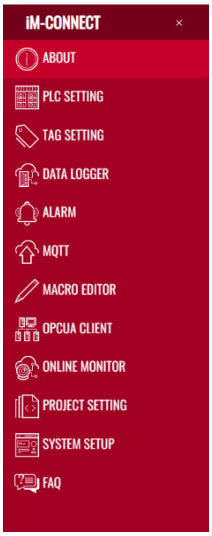
2. Interface Description

After entering the URL and logging in, the following webpage is displayed.



Ⓐ IM-CONNECT Menu	Ⓑ System Status Bar
Ⓒ Operation Setting Area	Ⓓ External Links

Ⓐ Click the button  to open the【IM-CONNECT】Menu. Then, choose the action to be performed：

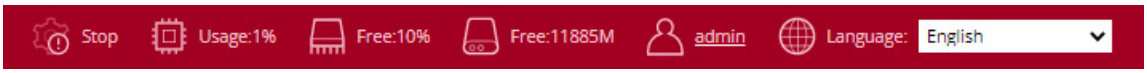


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【IM-CONNECT】website options：

IM-CONNECT Menu
1.ABOUT
2.PLC SETTING
3.TAG SETTING
4.DATA LOGGER
5.ALARM
6.MQTT
7.MACRO EDITOR
8.OPCUA CLIENT
9.ONLINE MONTOR
10.PROJECT SETTING
11.SYSTEM SETTING
11.1 System Information
11.2 Network Setup
11.3 Date and Time
11.4 Security Setting
11.5 Service Status
12.FAQ

Ⓑ System Status Bar：



： Display whether the RT is running or stopped

： Display the percentage of current CPU usage

： Display the remaining capacity of SDRAM

： Display the remaining capacity of Flash

： Press to log out current user

： The language to be displayed in the interface and on the webpage. 2 options are available at this moment, including 【English】, 【Traditional Chinese】, 【Simplified Chinese】and 【Japanese】.

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Ⓒ Operation Setting Area：The selected function can be set up and performed in this area.

Ⓓ External Links：By clicking the buttons, you can access to Novakon official website for product introduction, document download or contact us for technical support.

The related settings and operations of each function are introduced in the following chapters.

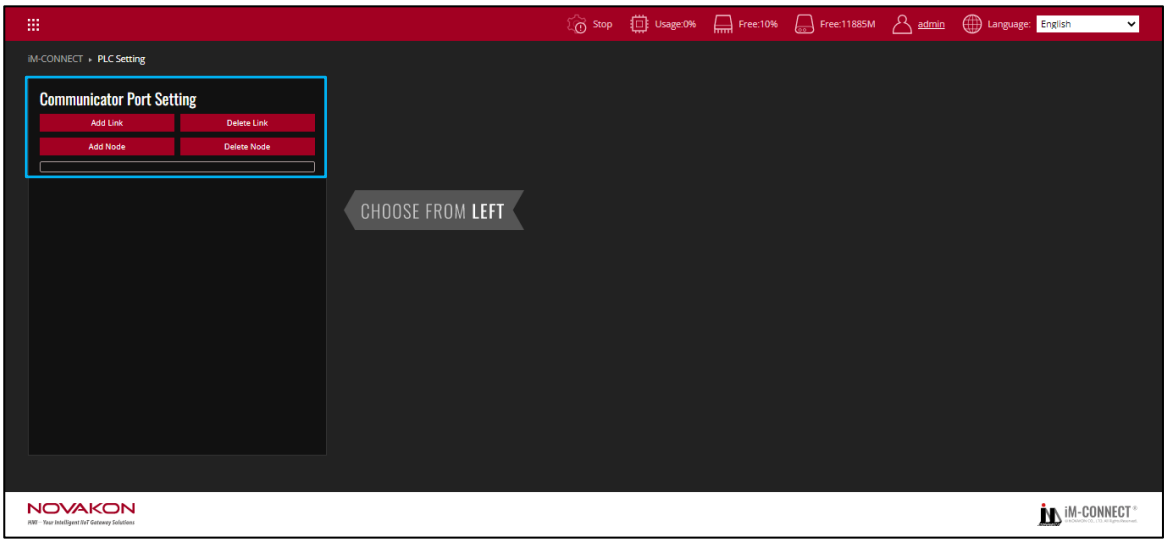
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3. PLC Setting

In the industrial automation applications, control and monitoring through the connection with PLC (Programmable Logic Controller) or controllers is very common. NOVAKON provides PLC Drivers that support various industrial communication protocols and PLC models widely used in the markets.

3.1 Communication Port Setting

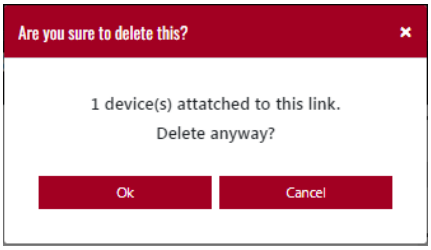
First, set the communication port and related parameter to be used.



【Add Link】：Add a new link to be connected.

【Delete Link】: Check the box of the link desired to be deleted. After pressing【Delete Link】, a dialog box would pop up for the user to confirm to delete a LINK.

Press 【Yes】 to delete the selected link. Press 【No】 to cancel this action.



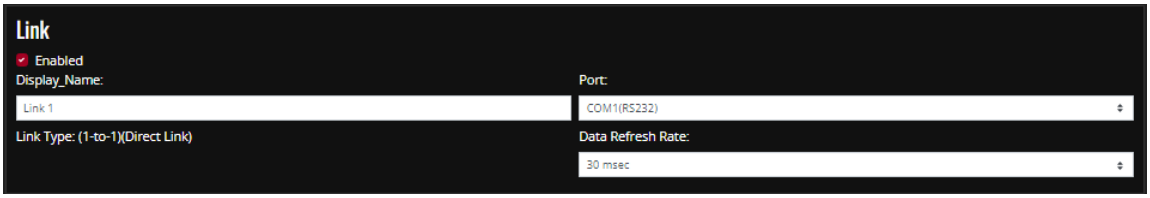
【Add Node】：Add a node to the selected Link.

【Delete Node】：Delete the selected node directly in the Link.

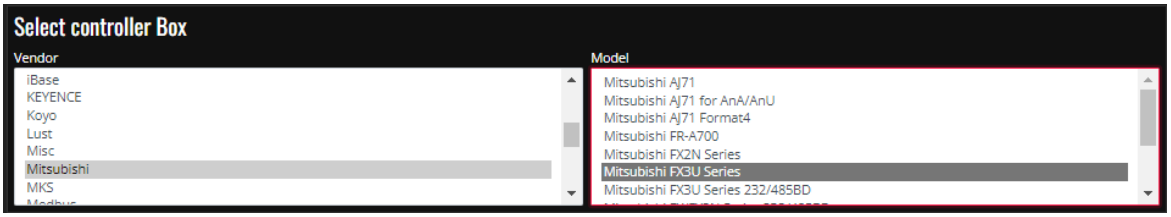
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After adding a new link, the related details of the Link can be set up, such as the communication port to be used, PLC model (Protocol type), communication parameters, etc.

3.2 Link Setting

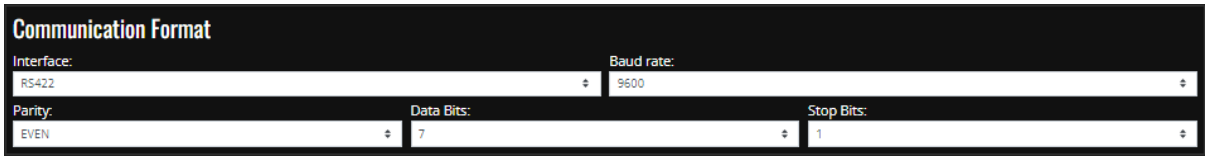


【Enable】: Check this box to activate the connection. The【Enable】is checked by default after the connection is established.
【Display_Name】: The name of the connection to be displayed. The default name is Link1.
【Port】：Select the communication port to be used. Based on different scenarios, one can select the corresponding communication ports, including【COM1(RS232)】、【COM1(RS422/RS485】、【Ethernet】.
【Link Type】：Indicating the current connection type of the control is 1 to 1 direct connection (1-to-1).
【Data Refresh Rate】：To set the speed and frequency of receiving data from the controller



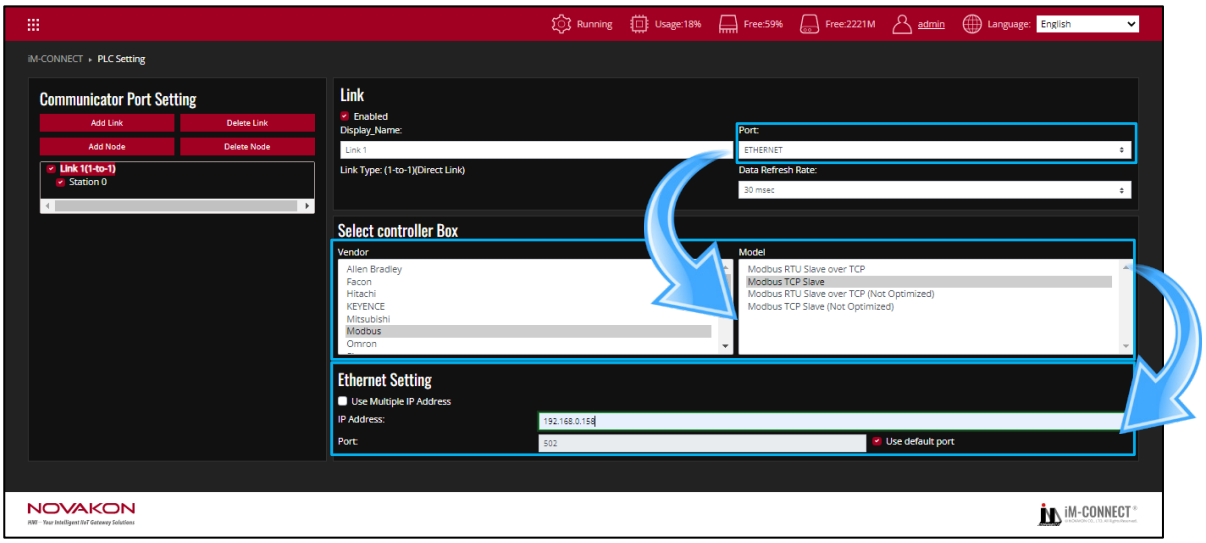
【Select controller Box】: Currently supported controller vendor and model. Please choose the vendor and then choose the model. For example, when COM is selected, only PLC models that support COM Port would be displayed. Likewise, when Ethernet is selected, only PLC models that support Ethernet are displayed.

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【Communication Format】：Set the communication format
【Interface】：Select RS232, RS422, or RS485
【Baud rate】：Select 4800, 9600, 19200, 38400, 57600, 115200, or 187500
【Parity】：Select Even, None, or Odd
【Data Bits】：Select 7 Bit or 8 Bit
【Stop Bits】：Select 1 Bit or 2 Bit

When the port is selected as Ethernet, only drivers that support Ethernet would be displayed, and the interface would be changed to the settings for Ethernet accordingly.

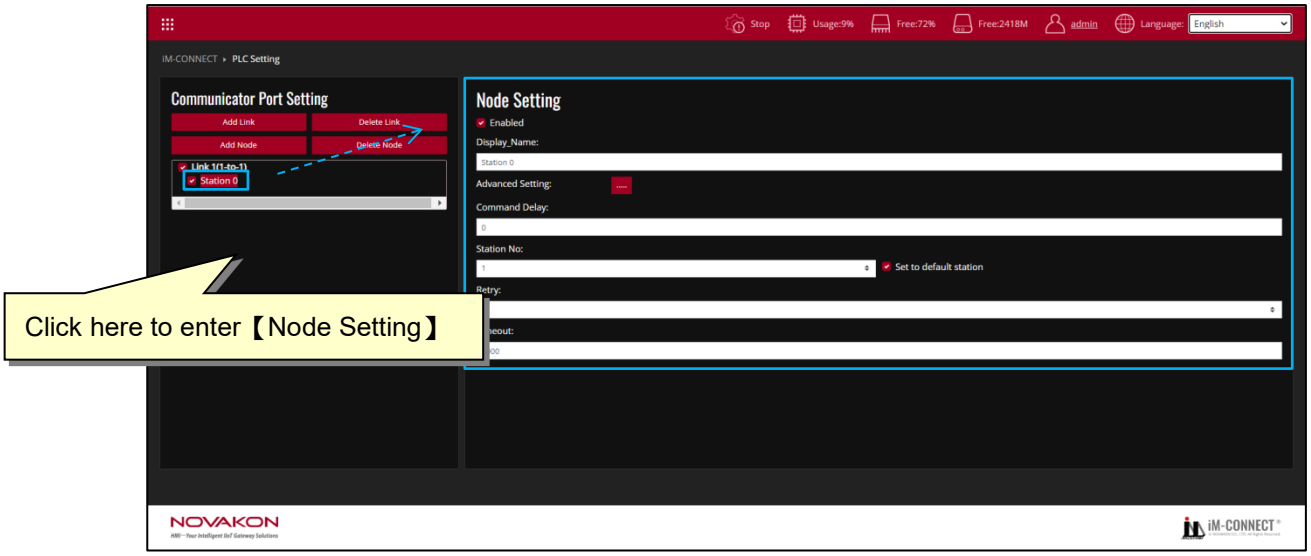


【Ethernet Setting】：The IP switching through multiple groups of controllers can be set up here, so that the GATEWAY can be connected to controllers with different IPs.

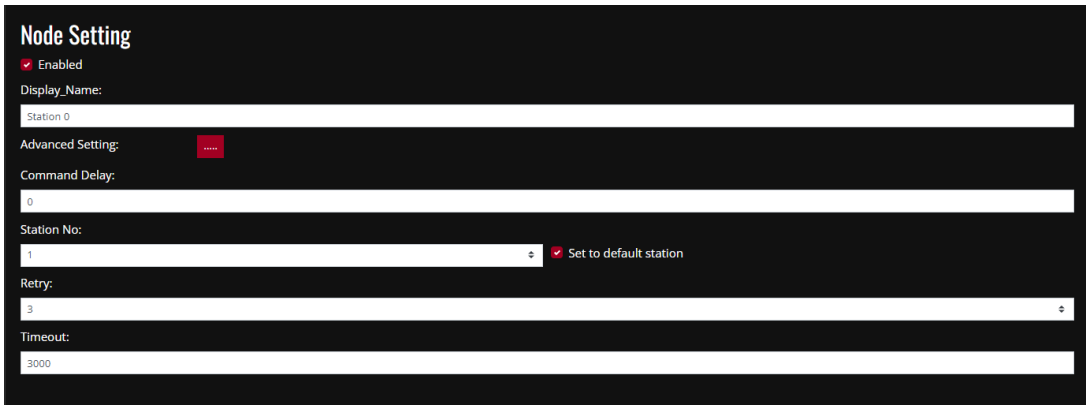
3.3 Node Setting

Node Setting is mainly used as auxiliary settings for connections, including information such as 【Command Delay】, 【Station No】, 【Retry】 and 【Timeout】.

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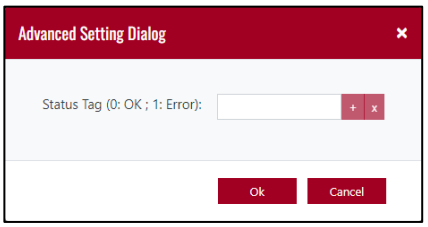
Double Click【Link1】to display【Station 0】. Click【Station 0】to enter Node Setting page.



【Enable】: Check this box to activate the node. This 【Enable】 box is checked by default when a node is created.

【Display_Name】: Set the name of selected node. Default name is Station 0.

【Advanced Setting】: Set the system to show connection status when there's error.



【Status Tag】: Status of connection (0 means connected; 1 means disconnected)

【Command Delay】: The delay time for sending and receiving of commands to the

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controller. The unit is milliseconds.

【Station No】: The station number corresponding to the controller connected to each node. This station number can be set as the preset station number, which is convenient for linking with the tag.

【Retry】: The number of times the confirmation signal would be automatically resent when the communication is abnormal.

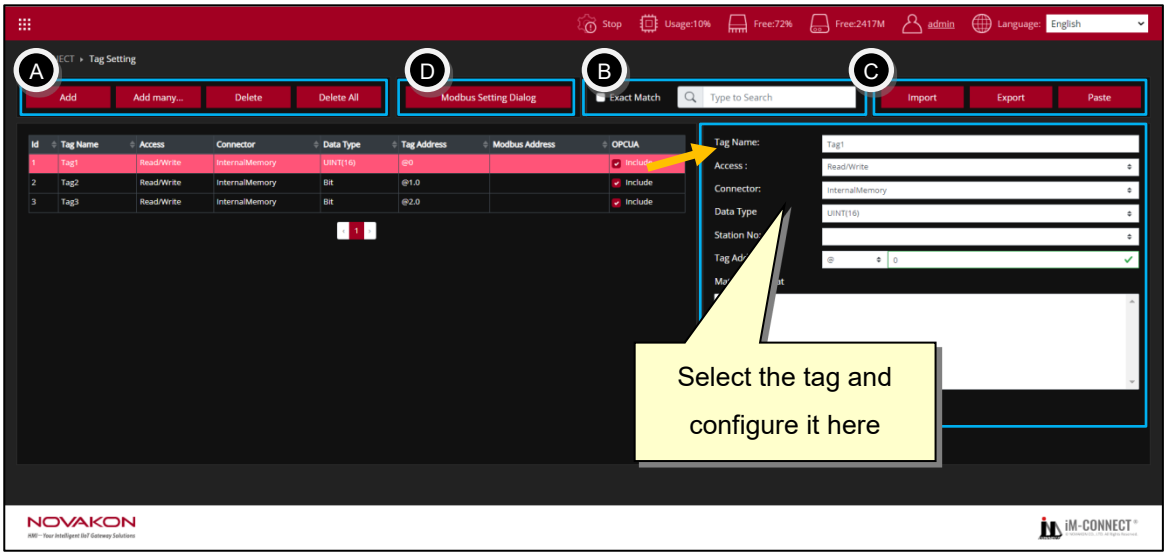
【Timeout】: The waiting time before the connection is terminated and an error occurs when the communication is abnormal. The unit is milliseconds.

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4. Tag Setting

Tag is closely related to each service, and almost all functions need well-defined tags. The way of using a tag is different for each function; however, setting a tag is quite similar. There are many benefits of using tags. One of them is to allow users to effectively summarize and organize the registers used by the controller.

Each ID represents a tag, which can correspond to the register address of a PLC or controller. If the registration number is not set, an error message would appear when entering the registered address and compiling.



Ⓐ. Tag operation：

【Add】: One tag can be added at a time. After pressing the【Add】button, the complete content of the tag can be created in sequence.

【Tag_Name】：Each tag can be assigned a tag name. The name supports multi-language input, and the name in English is case-sensitive (for example, Apple and apple represent two different tag names). The tag name must not be duplicated.

【Access】：Set the tag to be【Read/Write】or【Write Only】.

【Connector】：Select the controller or the InternalMemory of Gateway to be used.

【Data Type】: Select the data type, including【Bit】,【INT(8)】,【UINT(8)】, 【INT(16)】, 【UINT(16)】,【INT(32)】,【UINT(32)】,【FLOAT】,【Ascii】,【DOUBLE】,【Ascii】, 【INT(64)】,【UINT(64)】.

【Station No】：The station number of the controller to be used. Some controllers have different station numbers, such as thermostats that use the Modbus protocol.

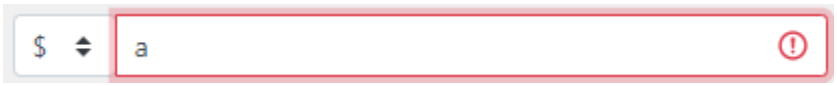
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【Modbus Address】：The value of this address can be copied to the specified Modbus address.
【Tag Address】：The address of the register. If the format or range of the register is unknown, please refer to the prompt in the 【Matched Format】 window below, which display such information for the input of 【Tag Address】.

The figure below shows that a green frame would appear if the entered address meets the format.



The figure below shows that a red frame would appear if the entered address does not meet the format.



If the selected connection is 【InternalMemory】, it means that no external controller is connected, and only the internal register provided by GATEWAY is used. There are currently two register codes that can be used：

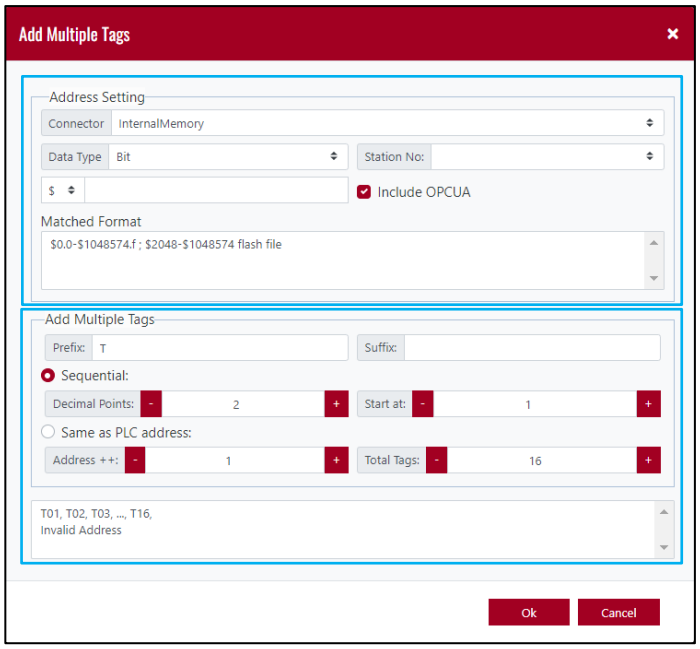
A. 【$】：This code represents the memory retaining with power off. When GATEWAY is restarted, the original data is still saved. The range is from $0 to $1048574, of which $2048 to $1048574 are stored in Flash.
B. 【@】：This code represents the memory not retaining with power off. When GATEWAY is restarted, the original data is not saved. The range is from @0～@65535.

The above-mentioned two register codes can be used without actual connection to external controller as long as the setting conforms to the data type format.

For example, when @0 (16-bit) is presented as a bit type, the expression is @0.0～@0.f. It can be understood that it is a squad of the troop. The left side of the decimal (integer place) means the number of squads, and the right side of the decimal (decimal place) is the squad number in the squad.

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【Add many…】：Multiple consecutive tags can be added at one time.



【Address Setting】：Selection of Connector, Data type, Station No, and address.

【Connector】：Selection of the controller to be used when adding new addresses.

【Data Type】: Selection of the type of data to be used when adding new addresses.

【Station No】：Selection of the station number of the controller to be used when adding new addresses.

【Address】：Enter the starting register address of the new tag.

【Matched Format】：This displays the format of the register address that the user can reference.

【Add Multiple Tags】：Set the format of add multiple tags

【Prefix】：Set the prefix of tag name

【Suffix】：Set the suffix of tag name

【Sequential】：The setting of custom prefixes and suffixes for the names of consecutively added multiple tags...

【Decimal Points】: The setting of the number of digits in the middle of the prefix and suffix.

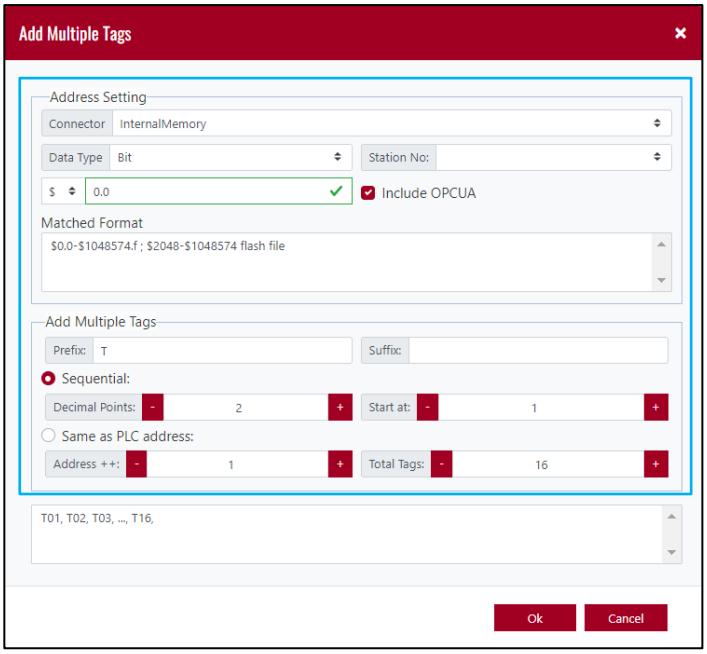
【Start at】：The starting number of 【Decimal Points】

【Address ++】：The number of increments of the register number in each step.

【Total Tags】：The total number of tags to be added.

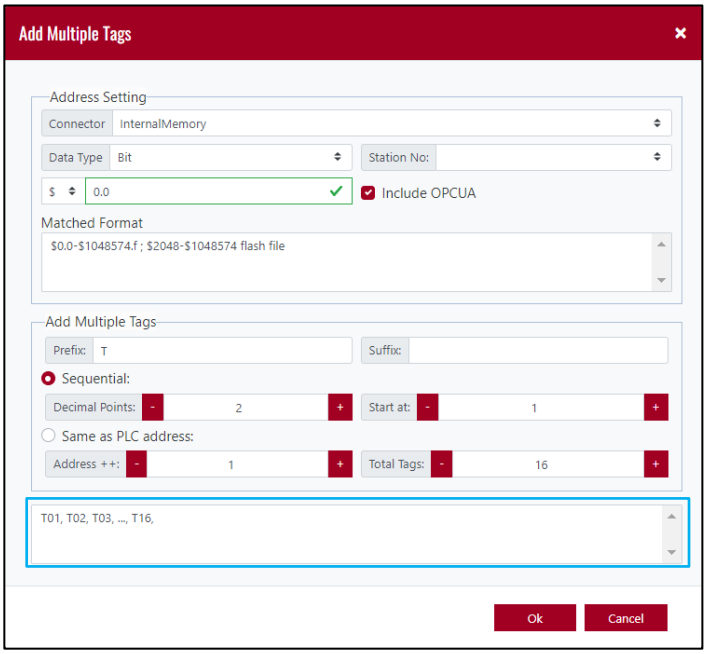
【Same as PLC address】：Check this box, and the new tag name would be the same as the address of the PLC register.

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For example, in the figure shown above, the controller is set a 【InternalMemory】(internal memory), and the data type is 【Bit】, the address is 【$0.0】. The prefix is set to 【T】, the suffix is not set, the number of digits is 【2】, and the initial value is 【1】, the address increment is 【1】, and the number of tags is 【16】.

When 【Continuous】 is selected, the tag name is set in the sequence of T01, T02, T03,..., T16, and the corresponding address is $0.0,$0.1,$0.2,...,$0.f.



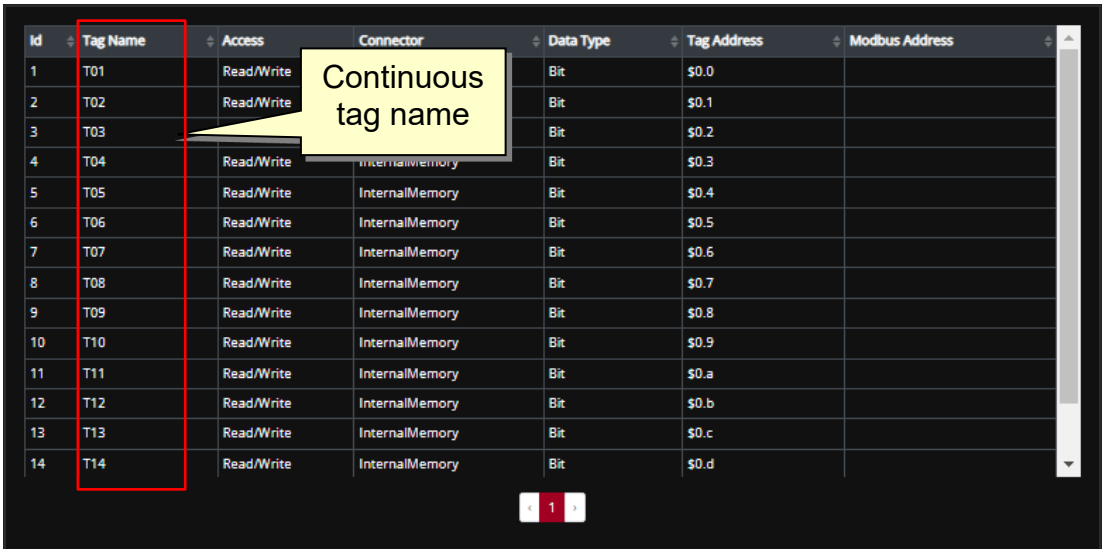
According to the new tag content set, the added tag name would be generated immediately to provide a preview at the bottom of the dialog box. If the setting is wrong, the preview window prompts the message of 【Invalid Address】.

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Click 【OK】 after completion, and GATEWAY would automatically add consecutive tags.

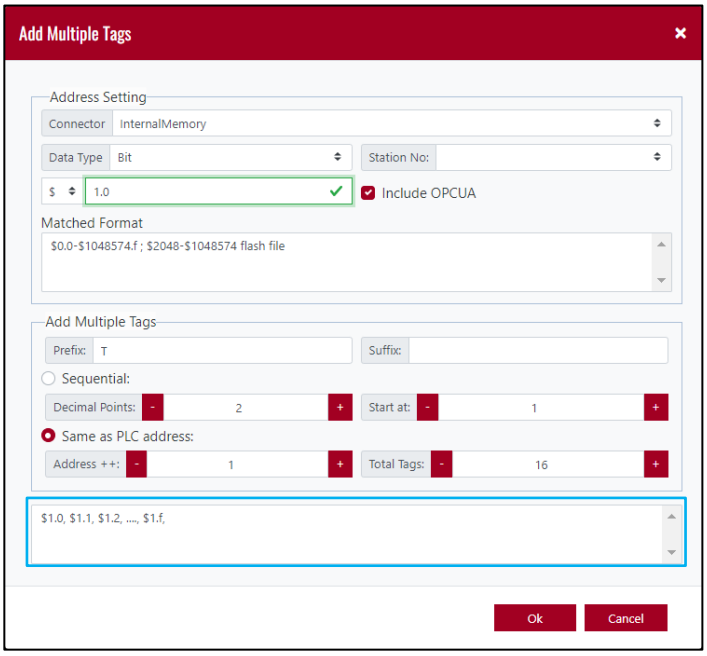
Note： All objects in the edit correspond to the tag name, not the address of the controller.

The following figure shows the content of the tag created when 【Continuous】 is selected.



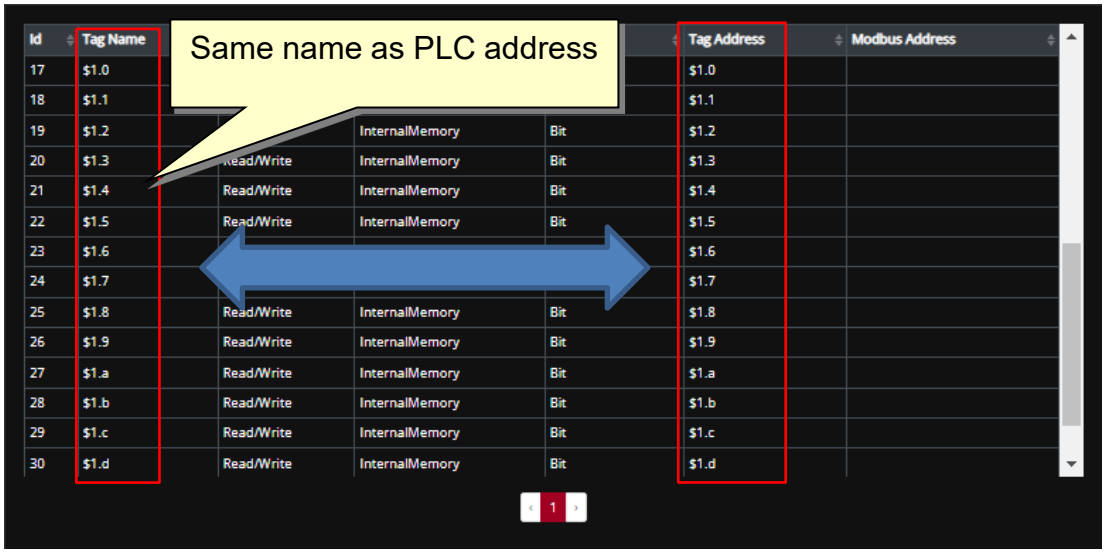
Id	Tag Name	Access	Connector	Data Type	Tag Address	Modbus Address
1	T01	Read/Write		Bit	$0.0	
2	T02	Read/Write		Bit	$0.1	
3	T03			Bit	$0.2	
4	T04	Read/Write		Bit	$0.3	
5	T05	Read/Write	InternalMemory	Bit	$0.4	
6	T06	Read/Write	InternalMemory	Bit	$0.5	
7	T07	Read/Write	InternalMemory	Bit	$0.6	
8	T08	Read/Write	InternalMemory	Bit	$0.7	
9	T09	Read/Write	InternalMemory	Bit	$0.8	
10	T10	Read/Write	InternalMemory	Bit	$0.9	
11	T11	Read/Write	InternalMemory	Bit	$0.a	
12	T12	Read/Write	InternalMemory	Bit	$0.b	
13	T13	Read/Write	InternalMemory	Bit	$0.c	
14	T14	Read/Write	InternalMemory	Bit	$0.d	

If 【Same as PLC address】 is selected, the tag name would be the same as the PLC address, as shown in the figure below.



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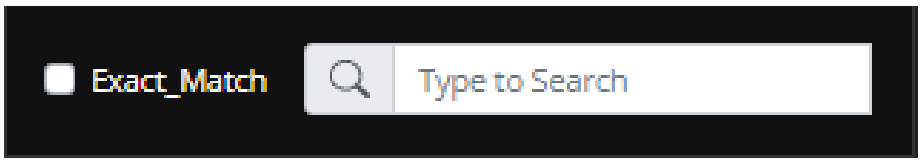
The following figure shows the created tag.



【Delete】: Click this button to delete a tag(s). Move the cursor to the leftmost serial number column, press, hold and drag the mouse's left button to select multiple tags, and click 【Delete】 to delete multiple tags simultaneously.

【Delete All】：Click this button to delete all the tags

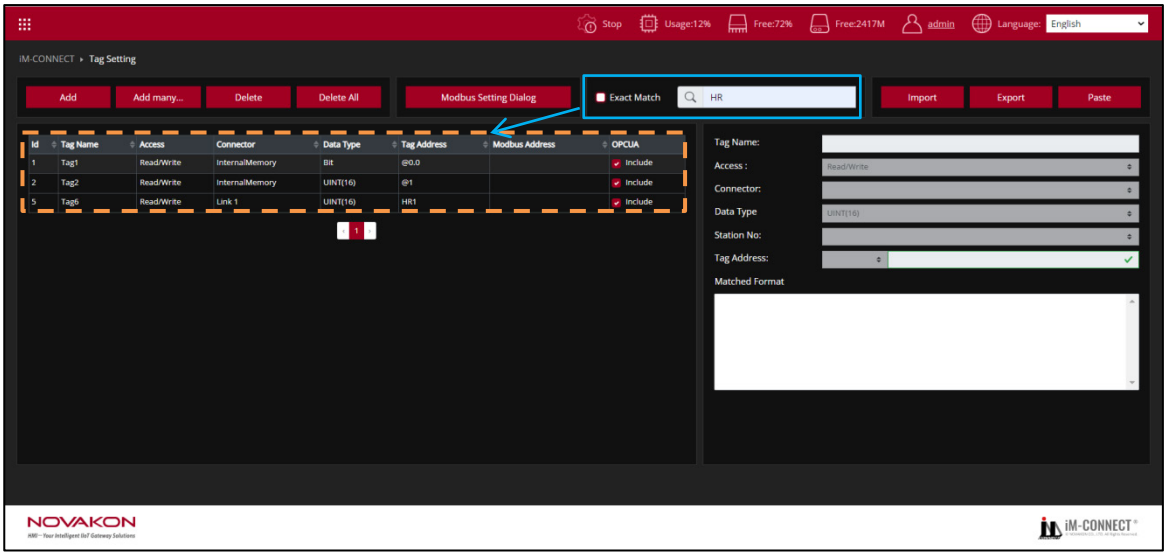
Ⓑ.【Search】：This is used for searching for tags that are the same as the keywords according to the input content, including tag name, type, address, etc.



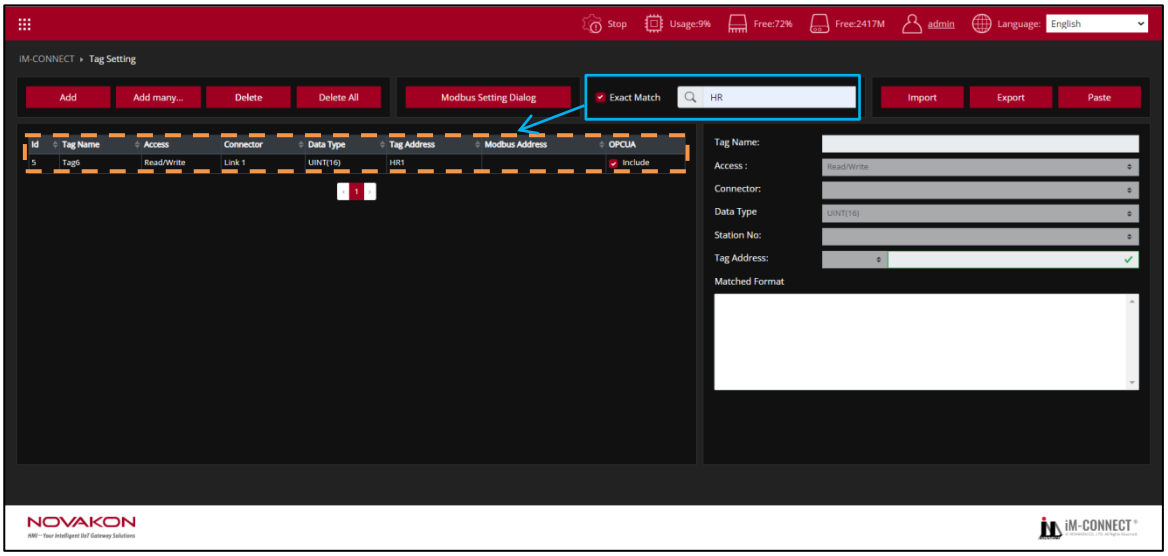
GATEWAY would automatically help us search for all matching tag content when we enter the text to be searched.

For example, after entering the search【HR】in the figure below, all tags containing【H】or 【R】 would be displayed, regardless of the order in which they are arranged.

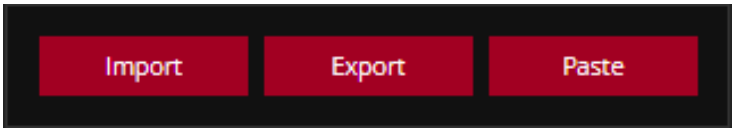
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But when 【Exact_Match】is checked, GATEWAY would automatically list all the tag names that meet the 【HR】 conditions, and the arrangement position must be correct.



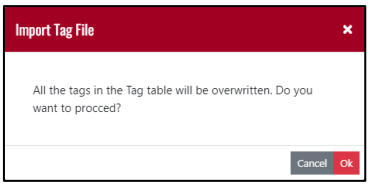
Ⓒ.【Import/Export】：Export is to output the data content of the tag into a text file (default as fileName.TXT). Import is to read the text file (*xml, *njnx, *.TXT) back into the tag content.



Click the 【Import】 button, and a confirmation window as shown in the figure below

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would pop up.



Click 【YES】 to confirm to execute the action of importing tags, select the file you want to import, and then press 【Open】.

Click 【NO】 to exit from executing the action of importing tag.

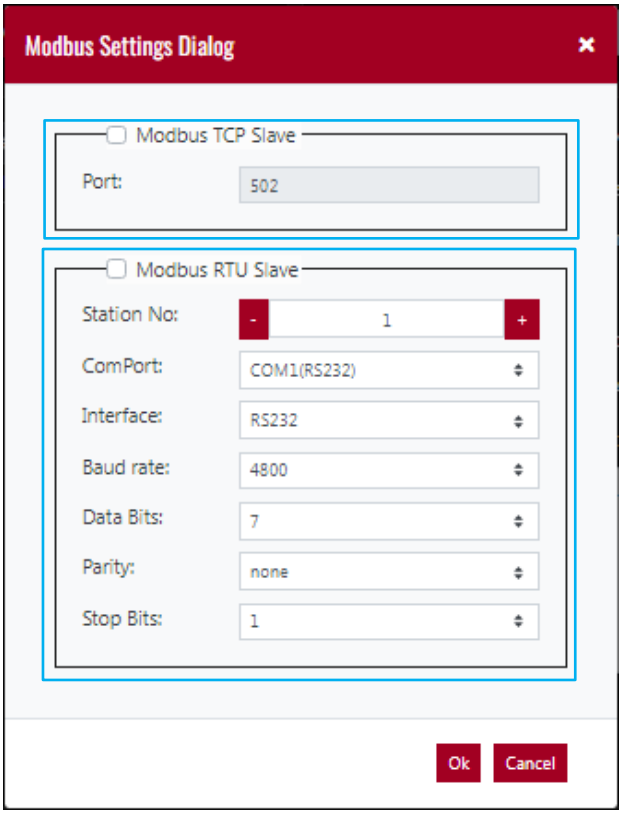
Click the【Output】button, the system will output the data content of the tags into a text file (*.TXT) as backup or for user to edit then import later.

The【Paste】button is for OMRON PLC NJ/NX series, click the button to import the tag lists copied from OMRON PLC program.

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Ⓓ. 【Modbus Setting Dialog】：Set GATEWAY as Modbus slave.

Note：When setting the Modbus slave controller in 【PLC Setting】, it means GATEWAY itself is Modbus Master, and the controller is Modbus slave.

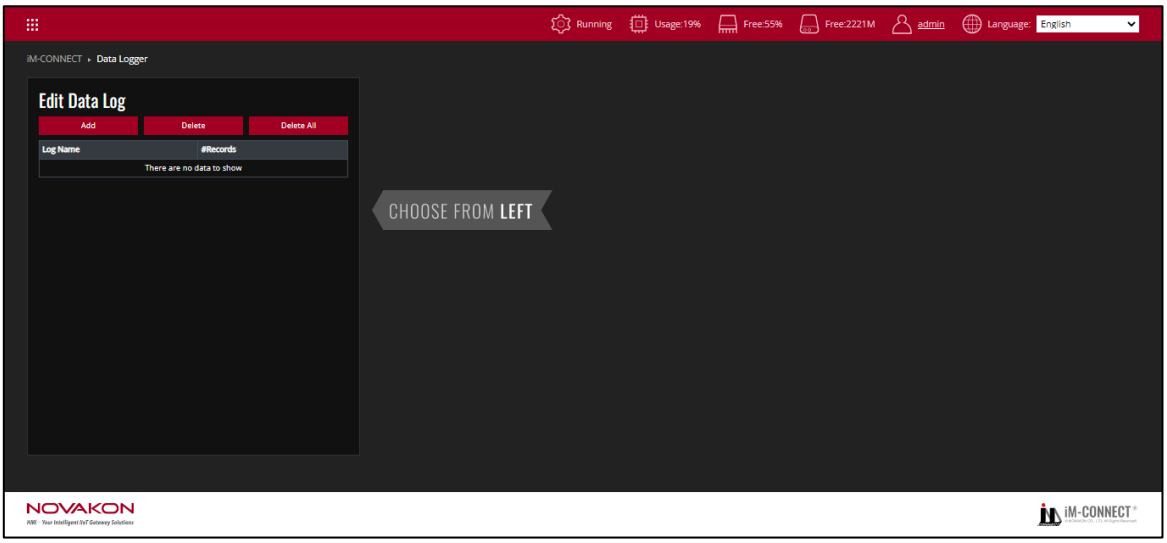


【Modbus TCP Slave】：Check the box to activate GATEWAY as【Modbus TCP Slave】.
【Modbus RTU Slave】：Check the box to activate GATEWAY as【Modbus RTU Slave】.

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5. Data Logger

【Data Log】：Store the historical data in flash memory and move to database at the defined timing.



【Edit data log】：Set the basic parameters of the data record. A buffer is created for each data record, and historical data can be stored in the buffer.

【Add】: Add a set of record. The records can be added up to 100 sets in maximum.

【Delete】：Delete the selected record name.

【Delete All】：Delete all the records at once.

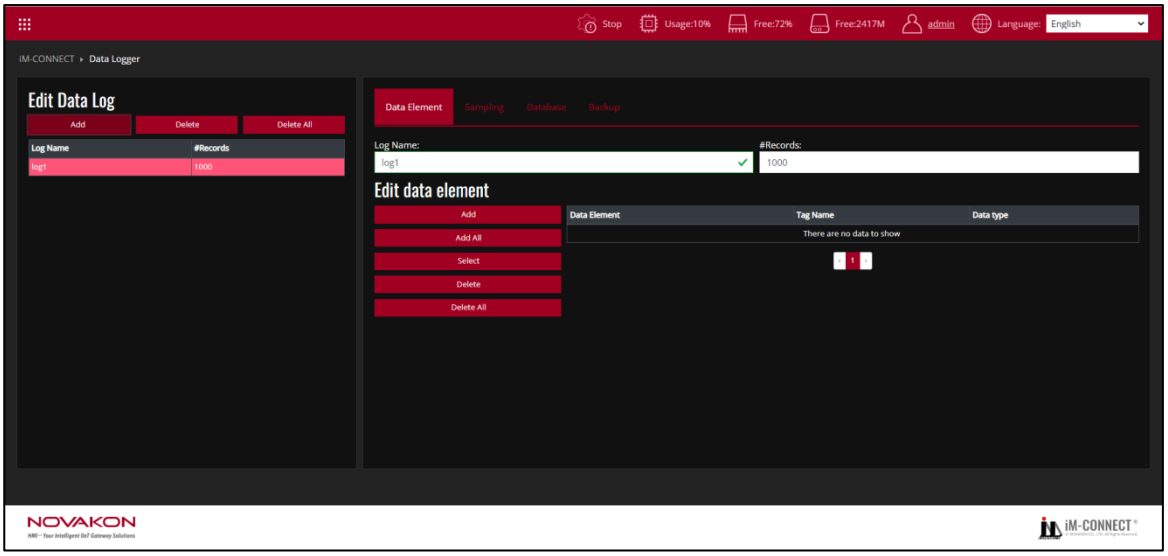
【LogName】：Define the name of the data record.

【#Records】：Set the limit of the number of backups in the data recording buffer. The maximum number is 65535.

【Log Name】 and 【# Records】 are located at the same position as shown in the above-edited data record content.

【Data Element】：Set the constituent items of the data record, including project uyname, tag, data format.

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【Edit data element】：Set the items and conditions of data records.

【Add】：Add a data element. The added items can contain 32 items in maximum.

【Select】：Select the existing tags as the item contents.

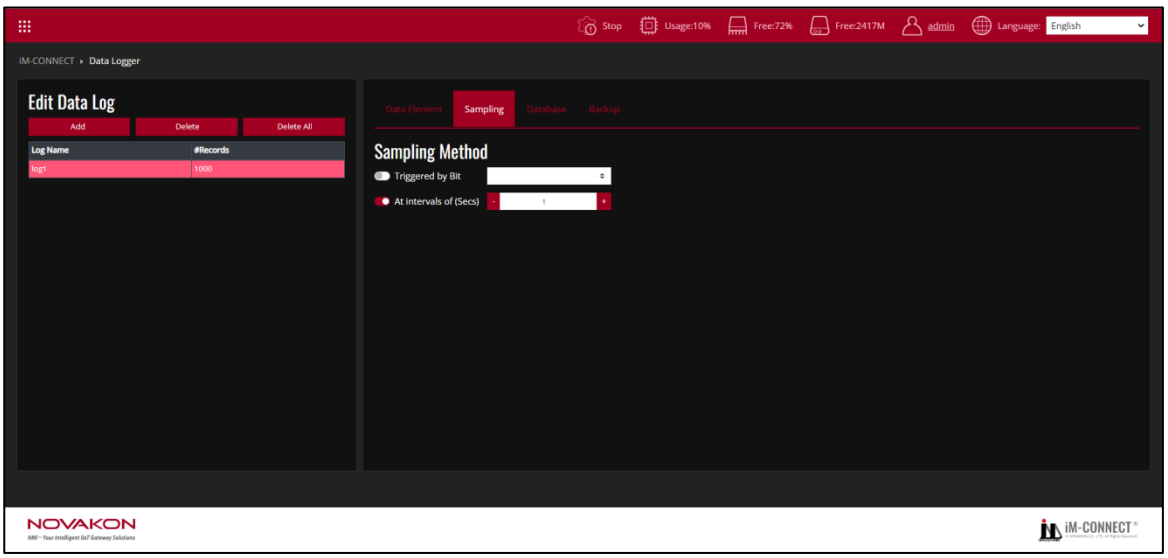
【Delete】：Delete the selected item.

【Delete All】：Delete all item at once.

【Data Element】: Set the item name. The name would be displayed in the database, and it supports multiple languages editing. Nevertheless, using English for naming is suggested.

【Tag Name】：Set the designated tag for each item. The tag type supports all formats.

【Data type】：Display the data type of each tags.



【Sampling】：Set the sampling conditions and the corresponding action.

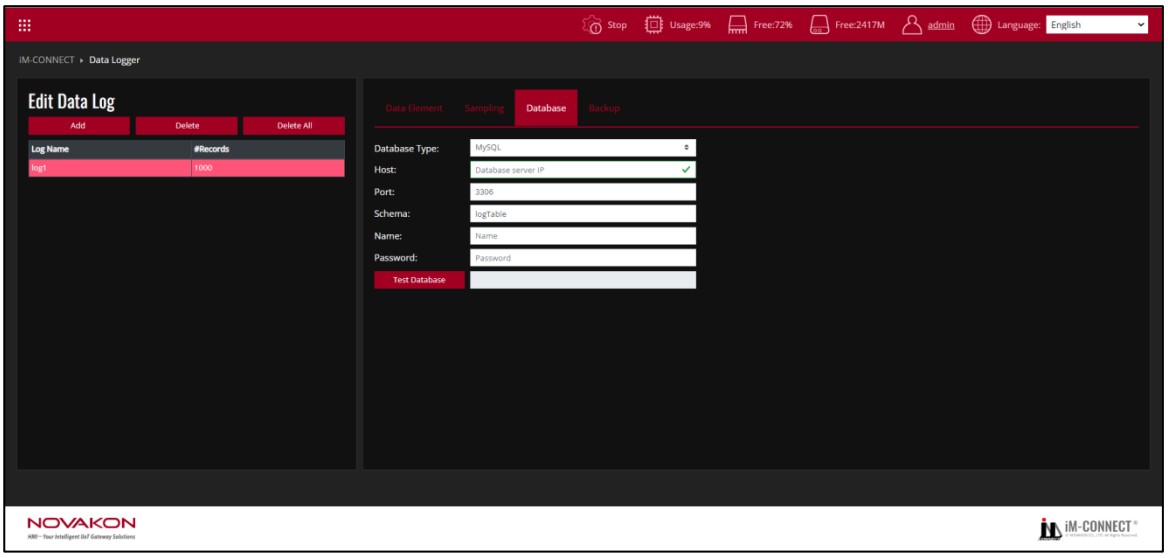
【Triggered by Bit】：Trigger the sampling based on Bit ON or Bit OFF.

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【At intervals of】: Set the fixed time interval of seconds for sampling records. The default value is 1.0 seconds.

【Communication】

【Default value (communication error)】: Set the value to indicate communication error.



【Database】: Set the uploaded database information.

【Database Type】: Set the database type. 【MySQL】and【MS SQL】are currently available in the latest version.

【Host】: Set the name or IP of the server for the uploaded database.

【Port】: Set the Port number of the uploaded database.

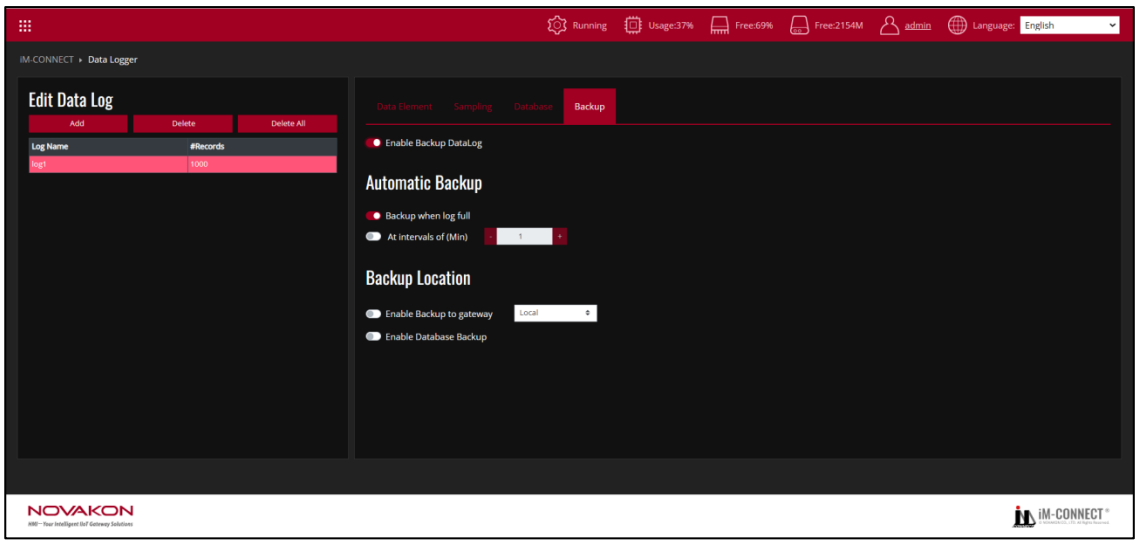
【Schema】: Set the name of the uploaded database.

【Name】: Enter the database username.

【Password】: Enter the database user password.

【Test Database】: Test the settings of the database. You can test the connection with database here as long as the boxes of【Enable Backup Datalog】and【Enable Database Backup】are checked.

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【Backup】：Set the backup time and device.

【Enable Database Backup】：Activate the database backup function.

【Automatic Backup】：Set the condition to trigger automatic backup

【Backup when log full】：When this option is activated, the data record is backed up when it is full.

【At intervals of】：Set a fixed time interval for performing the sampling. Default setting is 1.0 minute.

【Backup Location】：Set the location to store datalogs

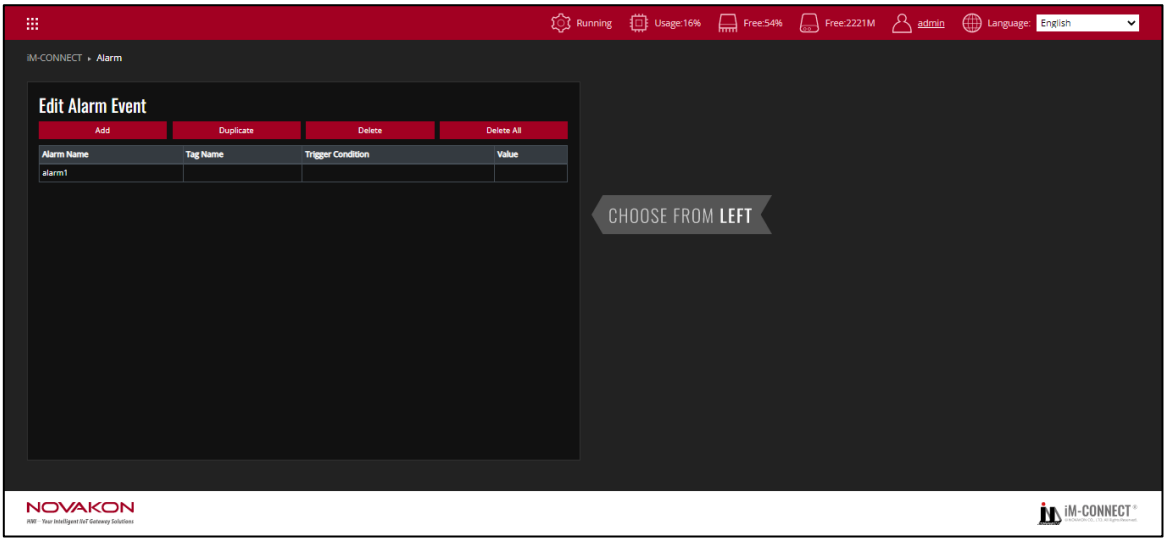
【Enable Backup to gateway】：When the data record is full, save the data into a file,which can be accessed through【FTP】and【USB】.

【Enable Database Backup】：When the data record is full, backup to the set database.

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6. Alarm

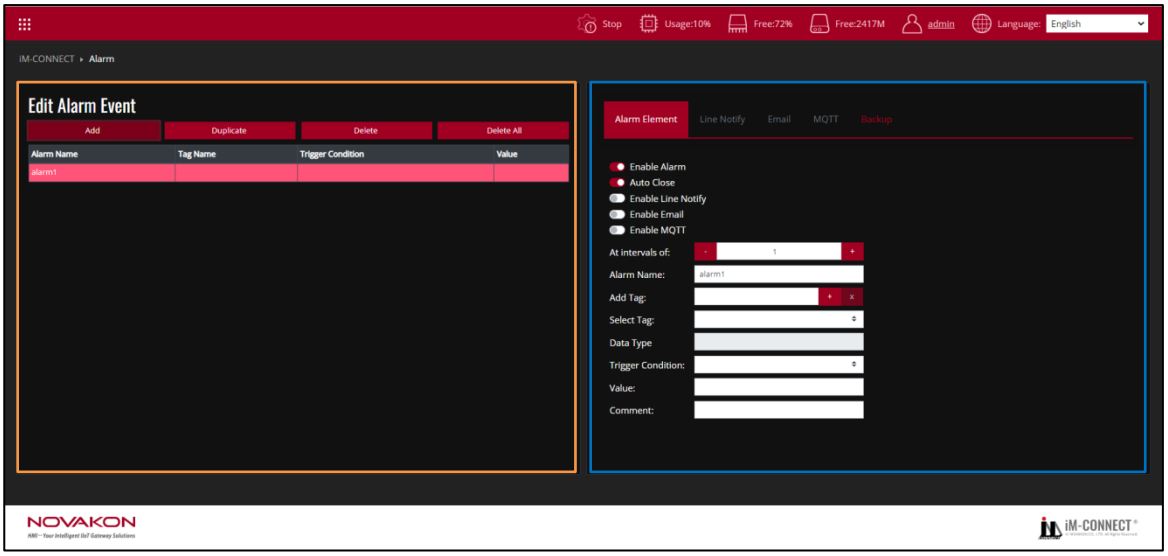
【Alarm】enables the set tag to send alarm messages through Line Notify, Email, or MQTT when the defined condition is met. (e.g. value falls in the predefined range, or bit turns on, etc.).



【Edit Alarm Event】 can be used to edit the content of the alarm data, including 【Add】, 【Duplicate】,【Delete】, and 【Delete All】.

【Add】：Add an alarm. One alarm content can be added at a time.
【Delete】:Delete an alarm. Move the mouse cursor to an alarm and press【Delete】to delete the selected alarm.
【Duplicate】：Copy an alert. After moving the mouse cursor to an alarm, press【Duplicate】to duplicate the same alarm. The name of the duplicated alarm would be incremented by the default name (alarm). The rest of the content is the same.
【Delete All】：Delete all alarms at once.

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In the above figure, the orange frame on the left shows all the alarms that have been set.

【Alarm Name】：Set the name of the alarm, which can be used to describe the content of the alarm.

【Tag Name】：Set the connected tag to determine whether an alarm occurs.

【Trigger Condition】：Display the trigger conditions.

【Value】：Display the condition value of the alarm.

The blue frame on the right side of the figure above is the dialog box for the alarm setting.

【Enable Alarm】：Activate the alarm. If this option is not activated, the alarm content would not be displayed regardless of whether the conditions are met.

【Auto Close】：When the alarm is cleared (the trigger condition is not met), the alarm is automatically closed. If this option is not activated, the alarm continues to be triggered even if the alarm condition has been removed.

【Enable Line Notify】：Set the Line Notify Messenger APP function when the alarm is triggered.

【Enable Email】：Set the function of sending email to a specified mailbox when the alarm is triggered.

【Enable MQTT】：Set the function of publishing message to the designated MQTT Broker when the alarm is triggered.

【At intervals of】：The interval between alarm sampling. The unit is seconds.

【Alarm Name】：Set the name of the alarm, which can be used to describe the content of the alarm.

【Add Tag】：Set the tag to determine whether an alarm has occurred. If the tag has not been created, press 【+】 on the right to add a tag.

【Select Tag】：The set tag can be selected as the one to judge the alarm.

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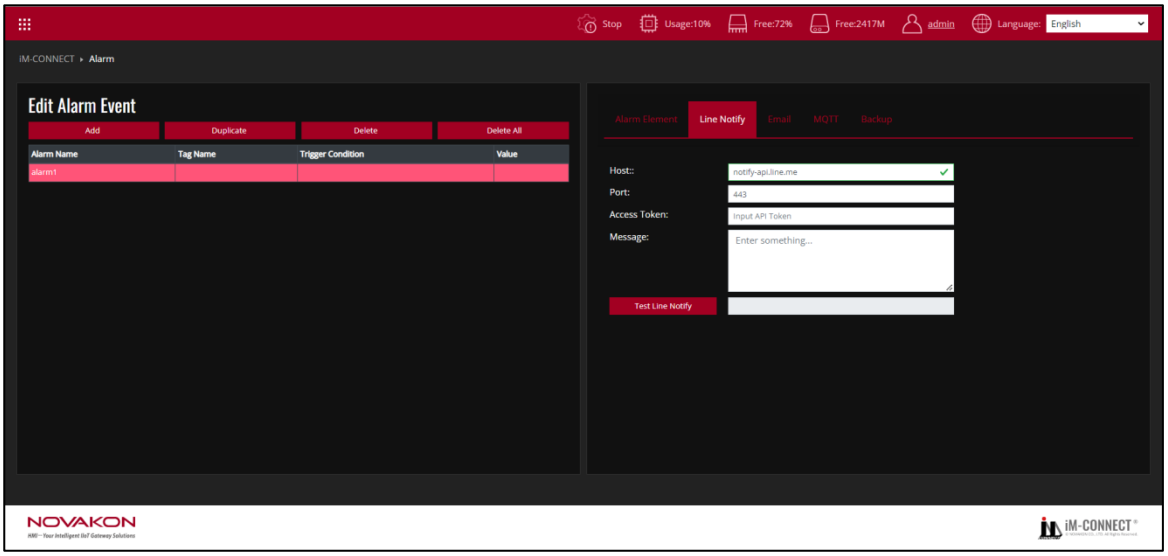
In the same alarm,【Add Tag】and【Select Tag】would have the same selected tag.

【Data Type】：Display the specified tag type.

【Trigger Condition】：Display the trigger conditions. When the trigger tag type is【Bit】,【Set】or【Clear】can be selected to trigger an alarm. The various types of judgment mechanisms, including【=】,【!=】(not equal to),【>】,【>=】,【<】and【<=】are available for selection.

【Value】：The value of the condition that the alarm is established. When the content of the【tag】meets the【value】of the【Trigger Condition】, the alarm would be triggered. If the source type is【Bit】, this field does not need to be set.

【Comment】：Set the description of the alarm.



【Line Notify】：Set the line group and message to be sent when the alarm is triggered.

【Host】：Display the default server address of Line Messenger App.

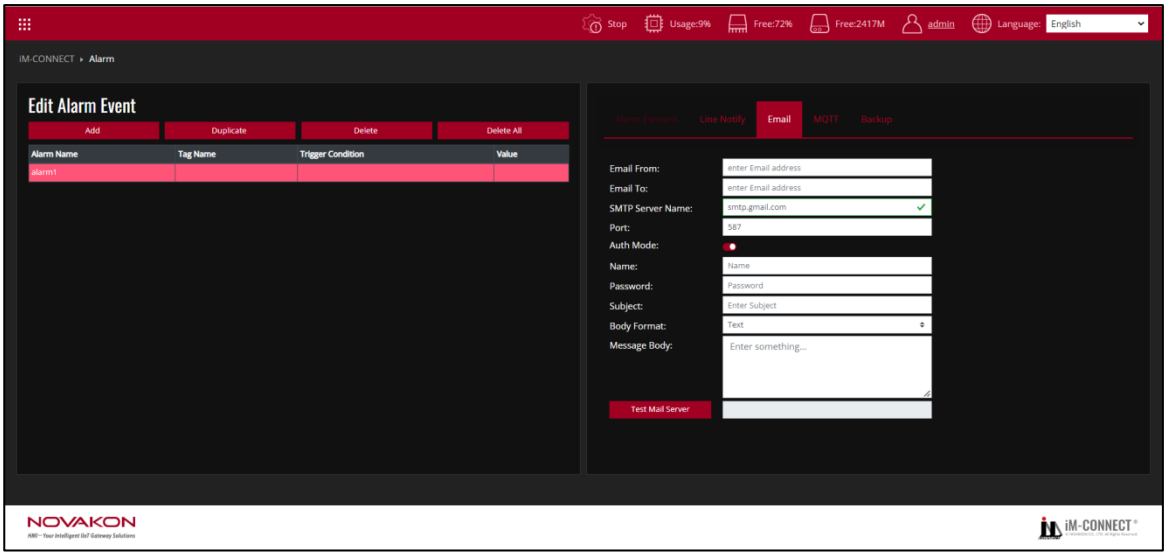
【Port】：Displays the default Port of Line Messenger App.

【Access Token】：Enter the access token for Line. For the line access token setting method, please refer to【Appendix：LINE Push Broadcast Setting】.

【Message】：Enter the content of the message to be pushed. Input【#{tag name}】in the Message Body if the message should contain Tag content.

【Test Line Notify】：Show the content of the response message after the push.

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【Email】：Set the email message to be sent when the alarm is triggered.

【Email From】：Enter the email address of the sender.

【Email To】：Enter the email address of the recipient. If multiple groups of emails need to be set up, please separate each group of emails with a comma.

【SMTP Server Name】：Enter the name of the SMTP server to be used.

【Port】：Display the port number to be used.

【Auth Mode】：Confirm whether to log in for verification.

【Name】：Enter the email address of the sender.

【Password】：Enter the sender's email password.

【Subject】：Enter the subject of the message.

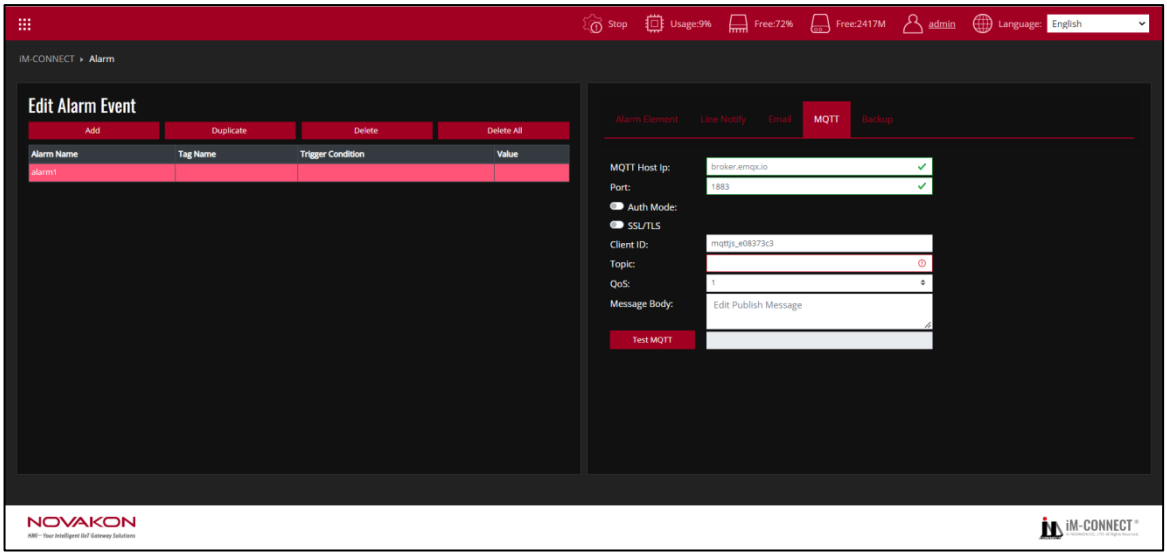
【Message Body】：Enter the content body in 【Text】 or 【Html】 format of the email to be sent.

【Test Mail Server】：The content of the response message to be shown after the email is sent. Input【#{tag name}】in the Message Body if the message should contain Tag content.

Note：

Please set up the above settings in accordance with the specifications of each email server. For example of Gmail, please set the 【Allow Low-Security Applications】 of the Google account to be 【Enabled】.

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【MQTT】: Set the designated MQTT client that receives the alarm message when the alarm is triggered.

【MQTT Host IP】：Set the MQTT Broker IP that receives the messages.

【Auth Mode】：Confirm whether authentication is required. If it is selected, the account name and password must be input.

【SSL/TLS/Port】：Set SSL/TLS port number.

【Require Certificate】：Confirm whether the certificate file is required or not.

【Upload Cert File】：Import the certificate provided by the Server.

【Upload Key File】：Import the key provided by the Server.

【SSL Secure】: After selecting it, the validity of the certificate file provided by the Server will be verified.

【Client ID】：Set the user's ID. Every MQTT user needs a unique ID. MQTT Broker identifies the users through the Client IDs, and records the status of the users individually, such as subscription topics and communication quality setting.

【Topic】：Set the topic name. The name must comply with MQTT naming principles.

【QoS】：The quality of service is divided into three levels： 0, 1 and 2. The greater the number, the better the quality.

0 ：Sent once at most (in charge of sending messages only, suitable for less critical situations).

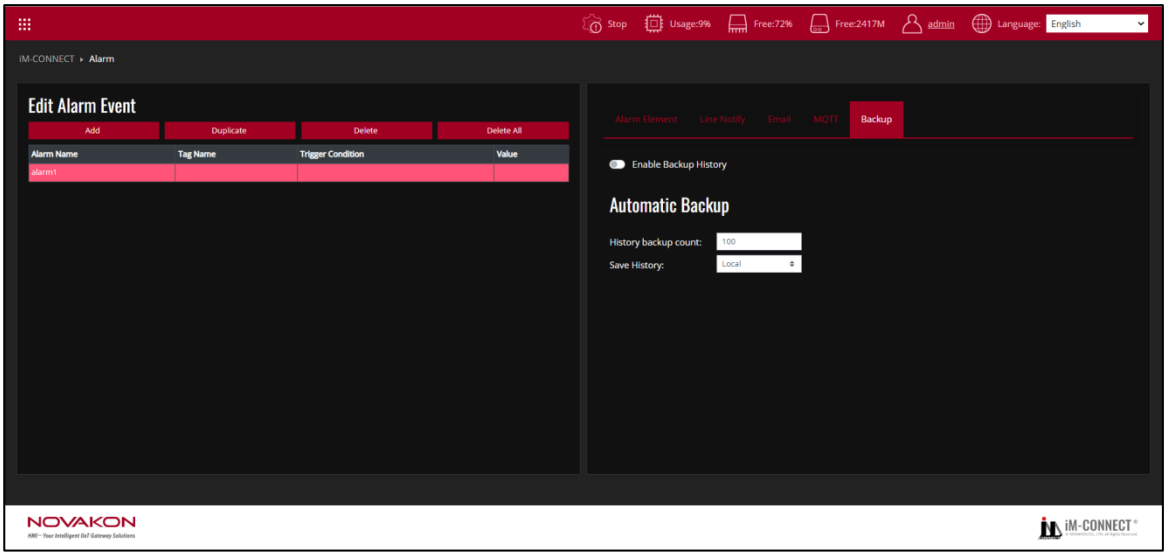
1 ：Sent once successfully at least (the data is correctly sent but message repetition may occur).

2 ：Sent once properly (rigorous delivery with the feedback of "message delivered").

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【Message body】: Input the message to be sent. If a tag is needed in the message, add 【#{tag name}】 in the message body.

【Test MQTT】 : The response message sent after MQTT is published.



【Backup】: Set the number of alarm history to be backup and the destination where the log to be saved. When 【Enable Backup History】is on, the condition of Automatic Backup can be set.

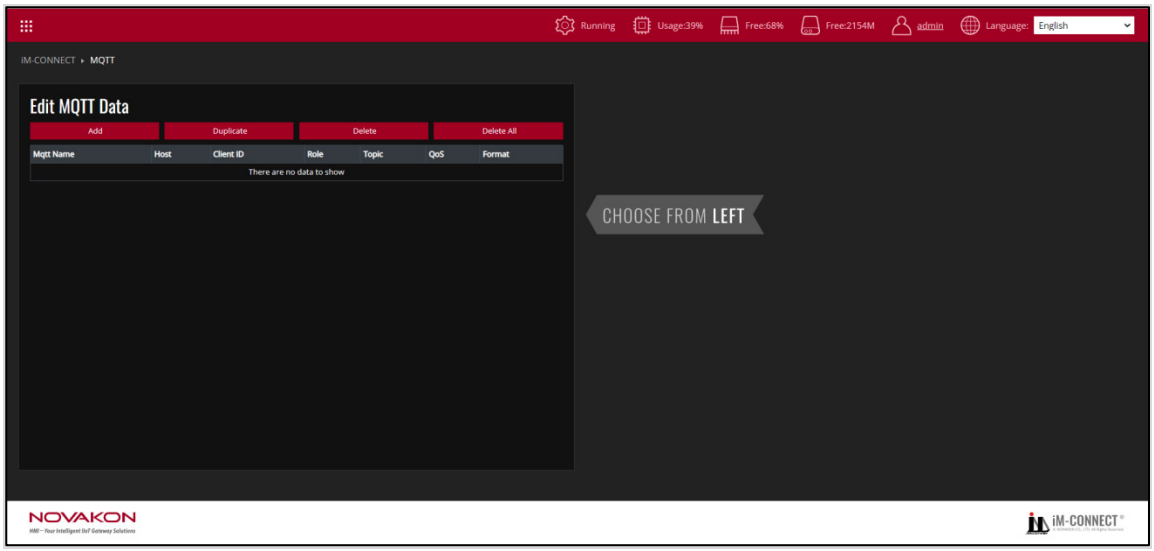
【History backup count】: Set how many alarm history to be automatically backup to the appointed storage.

【Save History】 : Set where to backup the history. 【Local】for Gateway local storage or【USB】for external USB disk.

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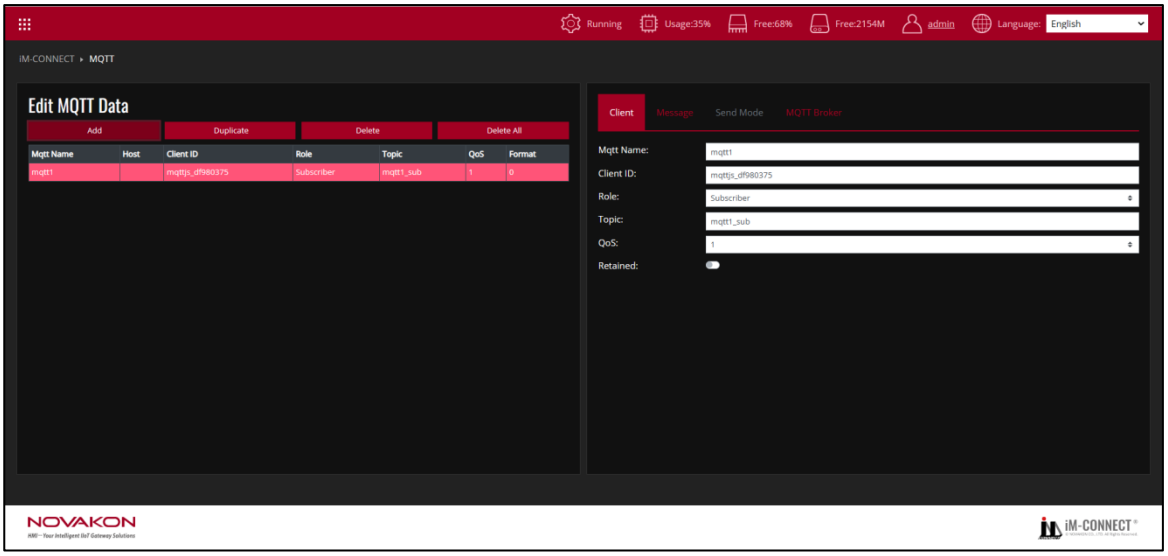
7. MQTT

MQTT is generally used as a messaging protocol in IoT (Internet of Things), with the main features of lightweight, openness, and easiness. When the program capacity is limited or the network bandwidth is limited, such advantages become more explicit. It is suitable to be used on the continuous monitoring of the data such as temperature, humidity, pressures, electricity, water level, and others.



【Add】：Add a set of MQTT items.
【Delete】：Delete the selected MQTT item.
【Duplicate】：Duplicate the selected set of MQTT items.
【Delete All】：Delete all the MQTT items.

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【Client】：

【MQTT name】：Assign a MQTT name.

【Client ID】：Set the User's ID. Every MQTT user needs a unique ID. MQTT Broker identifies the users through the Client IDs, and records the status of the users individually, such as subscription topics and communication quality setting.

【Role】: Set the role in MQTT. There two major roles in the MQTT protocol： Publisher and Subscriber. The Subscriber must subscribe the topics that it needs. Then, when the Publisher publishes messages to the topic, the broker sends such messages to Subscribers who subscribed to the same topic.

Publisher：To set as a Publisher. The tag body will be published to the designated broker.

Subscriber：To set as a Subscriber. Subscribe the designated broker and set a value to the tag when receiving the data.

When the Role is set as the Publisher, the tag to be sent must be set up; otherwise, no tag will be sent as default.

【Topic】：Topic name to be used.

【QoS】: The quality of service is divided into three levels： 0, 1 and 2. The greater the number, the better the quality.

0 ：Sent once at most (in charge of sending messages only, suitable for less critical situations).

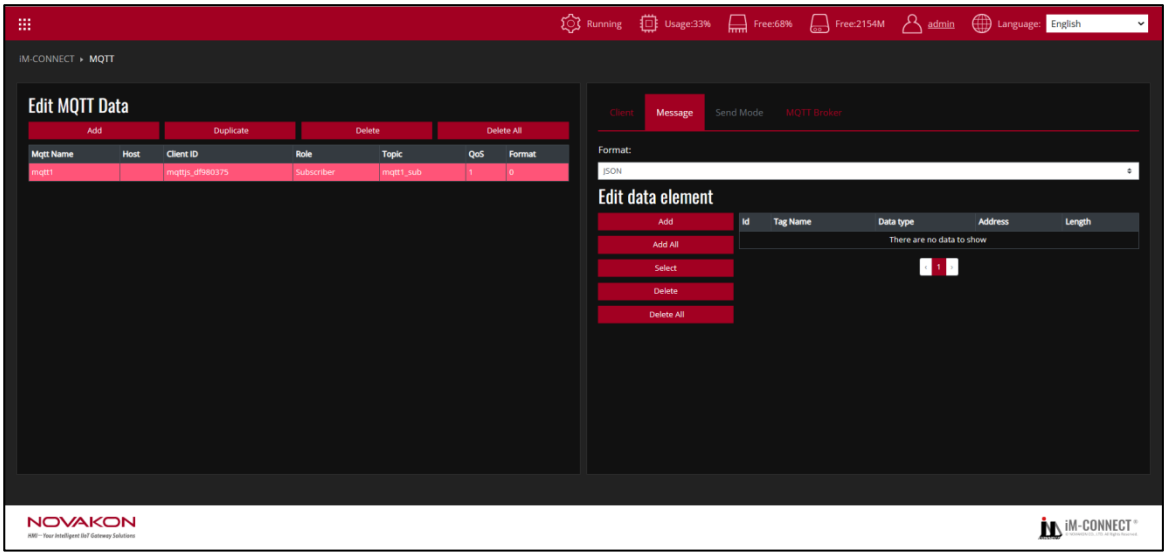
1 ：Sent once successfully at least (the data is correctly sent but

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message repetition may occur).

2 ：Sent once properly (rigorous delivery with the feedback of “message delivered”).

【Retained】：Retain the last message successfully sent.



【Edit the message】：

【Data format】：Designate the MQTT format. Select 【JSON】(default), 【Binary】 or【Customize】.

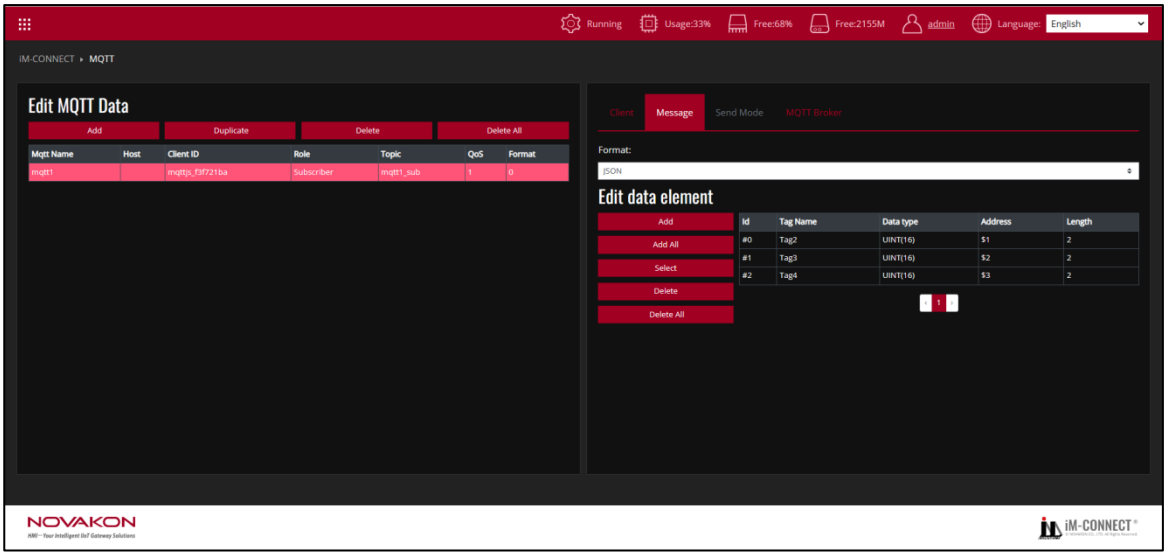
【JSON】：Through the JSON standard format, the tag content set according to the Publisher is output.

As shown in the following diagram, when the sending condition is established, the Publisher sends the content to the Subscriber(s) according to the content values of the set tags T01, T02, and T03.

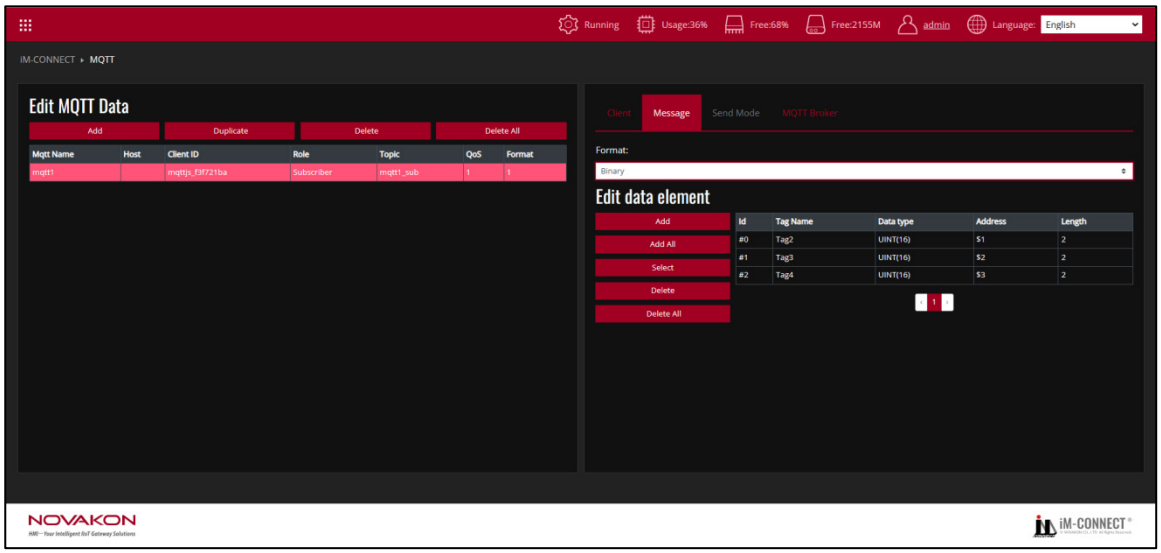
The format consists of： {“Publisher_Tag name1”： Send value1,“Publisher_Tag name2”： Send value 2,” Publisher_Tag name3”： Send value 3 , and so on.}

Thus, the input format shall be： {“T01”：value,“T02”： value,”T03”： value }

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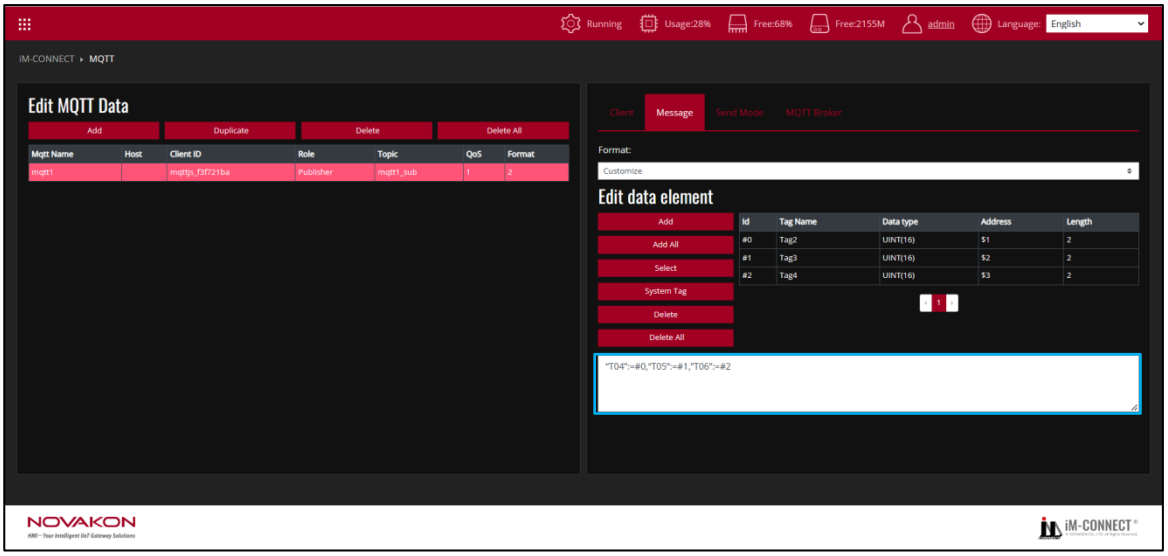
【Binary】: The tag content set according to the Publisher will be reorganized into binary format and output



【Customize】: The tag content is output based on the user's customized format. (Only as Publisher)

As shown in the following diagram, when the sending condition is established, the Publisher sends the content of tags T04, T05, and T06 to the Subscriber(s) according to the content values of the set tags T01, T02, and T03.
The format consists of： {"Subscriber_Tag name1"： Publisher_ID1,"Subscriber_Tag name2"： Publisher_ID2," Subscriber_Tag name3"： Publisher_ID3 , and so on.}
Thus, the input format in this case shall be： {"T04":=#0,"T05":=#1,"T06":=#2}

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【Add】 ：Add a MQTT item.

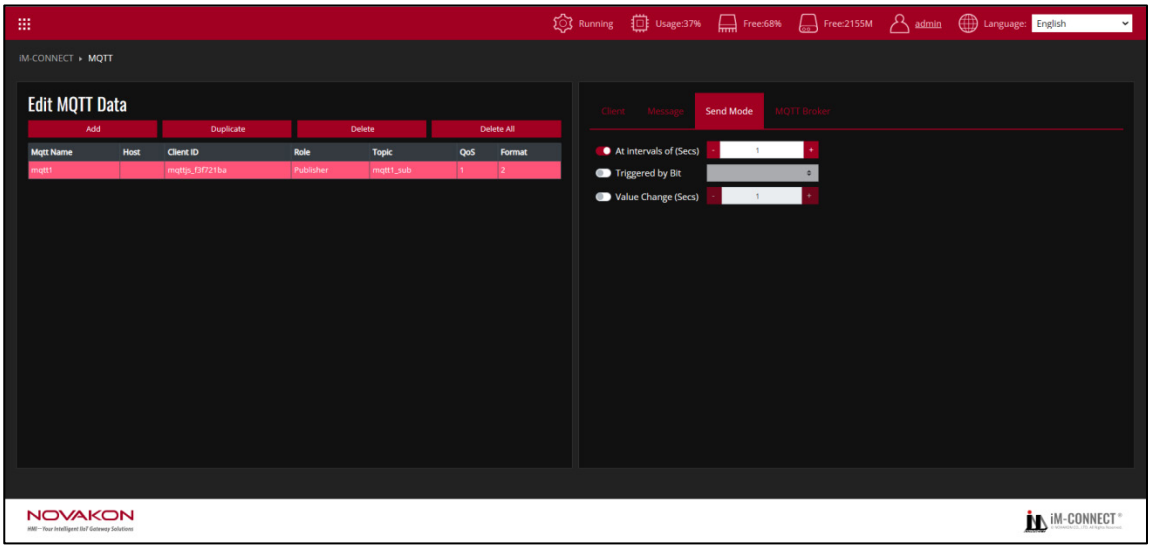
【Add All】：Add all tags to MQTT items.

【Select】：Select a MQTT item.

【System tag】：Use the system tag to obtain Gateway system time and other information.

【Delete】：Delete the selected MQTT item.

【Delete all】：Delete all the MQTT items.



【Send Mode】：Set the method or condition for sending MQTT message.

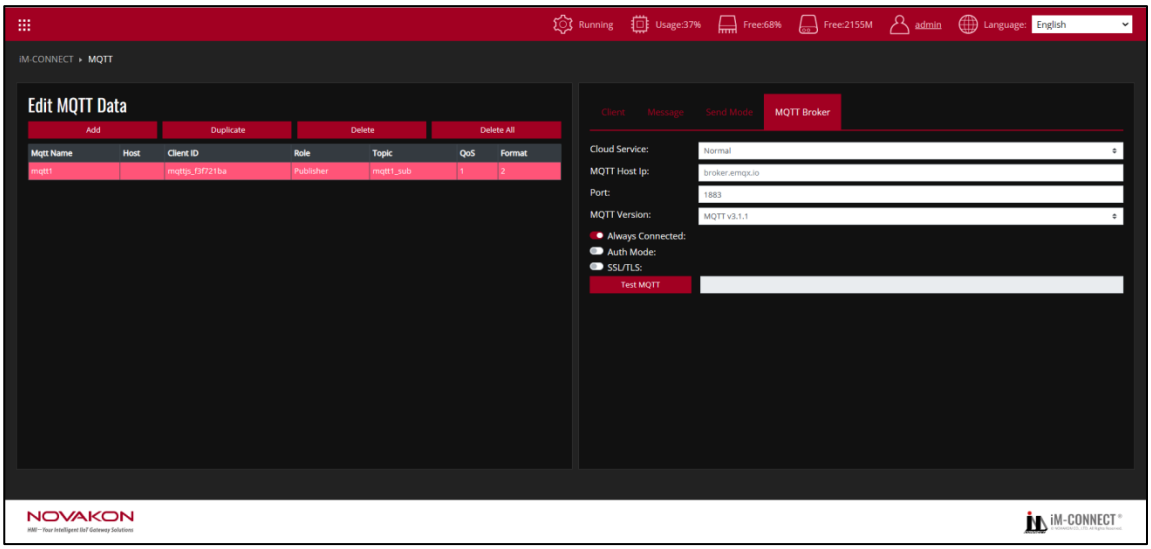
【At Intervals of(Secs)】：Set to send MQTT message in a fixed interval in seconds. The default is 1 second.

【Triggered by Bit】: Set to send MQTT message when the status is triggered by bit, from

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OFF to ON.

【Value Change(Secs)】: Set to send MQTT message when the designated tag status is changed.



【MQTT Broker】:

【Cloud Service】: Select【Normal】,【AWS IoT】,【Azure IoT Hub】,【Google Cloud IoT】 according to the requirement.

【Normal】:

【MQTT Host IP】: Set the MQTT broker's IP, to receive the messages.

【Port】: Set the port number that allows the connection with an external device.

【MQTT Version】: Set the version of MQTT.

【Auth Mode】: Confirm whether authentication is required. If it is selected, the account name and password must be input.

【SSL/TLS】: Enable SSL/TLS encryption mechanism.

【Require Certificate】: Confirm whether the certificate file is required or not.

【Upload Cert File】: Import the certificate file provided by the Server.

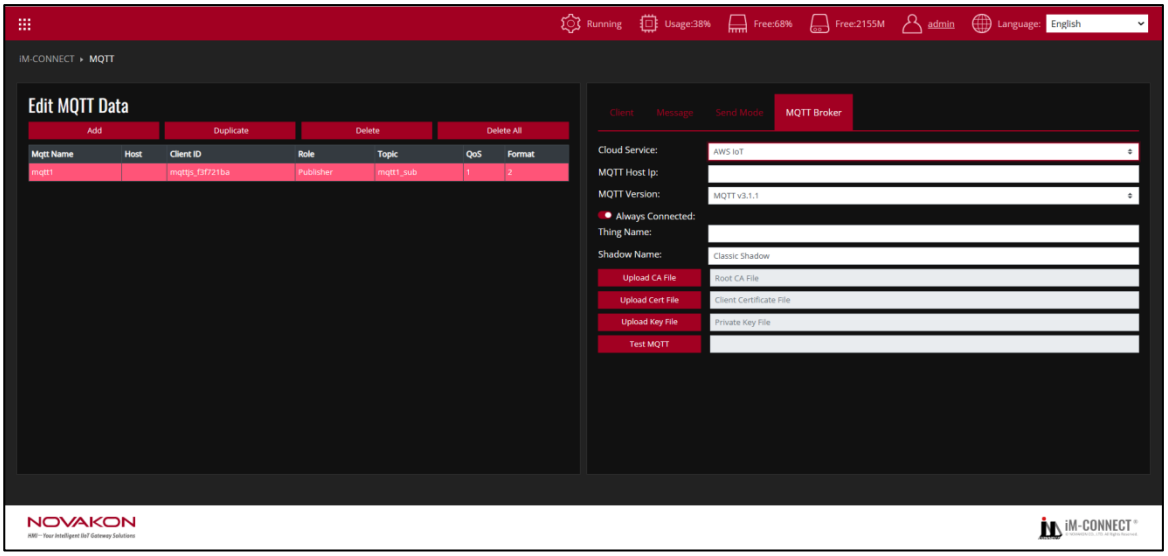
【Upload Key File】: Import the key file provided by the Server.

Note: Enable either【SSL/TLS】or【Require Certificate】at one time according to actual use case requirement.

【SSL Secure】: After selecting it, the validity of the certificate provided by the Server is verified.

【Test MQTT】: It shows the response message sent by MQTT.

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【AWS IoT】：Choose AWS IoT as Broker by using Thing to send message with Shadow support.

【MQTT Host IP】：Set the IP address of MQTT Broker in use.

【MQTT Version】：Set the version of MQTT Broker in use.

【Always Connected】：Set the MQTT to be always connected.

【Thing Name】：Set the name of AWS IoT Thing.

【Shadow Name】: Set the Shadow name that AWS IoT Thing corresponds to. Shadows can make a device's state available to apps and other services whether the device is connected to AWS IoT or not.

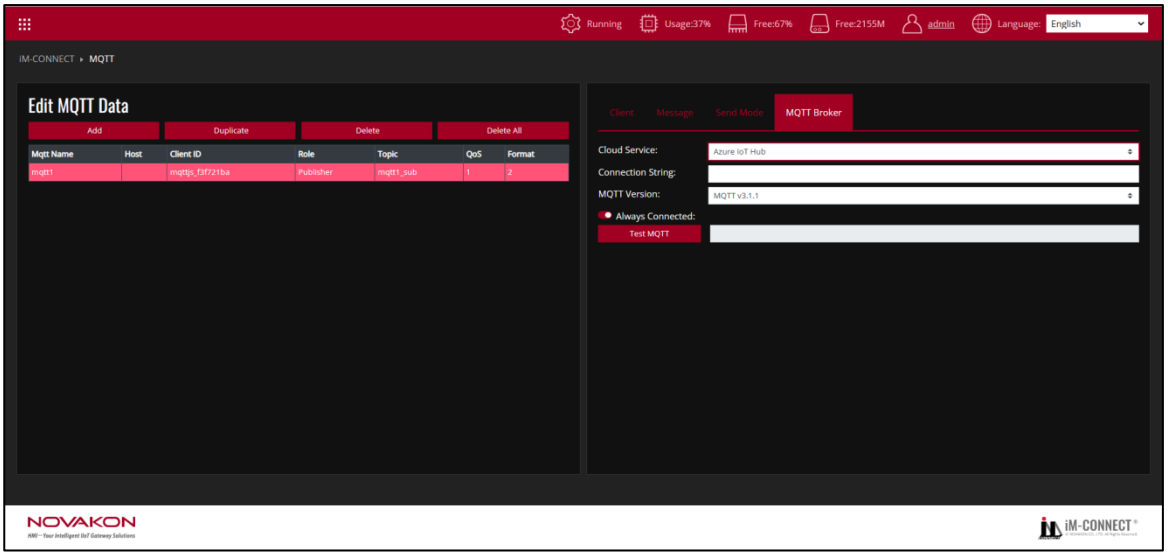
【Upload CA File】：Upload the client certificate signed by Certificate Authorities (CA) verified by Amazon.

【Upload Cert File】：Upload the certificate file.

【Upload Key File】：Upload the key file.

【Test MQTT】：Show the message received after MQTT publish.

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【Azure IoT Hub】：Set Microsoft Azure IoT Hub as Broker, input the correct connection string.

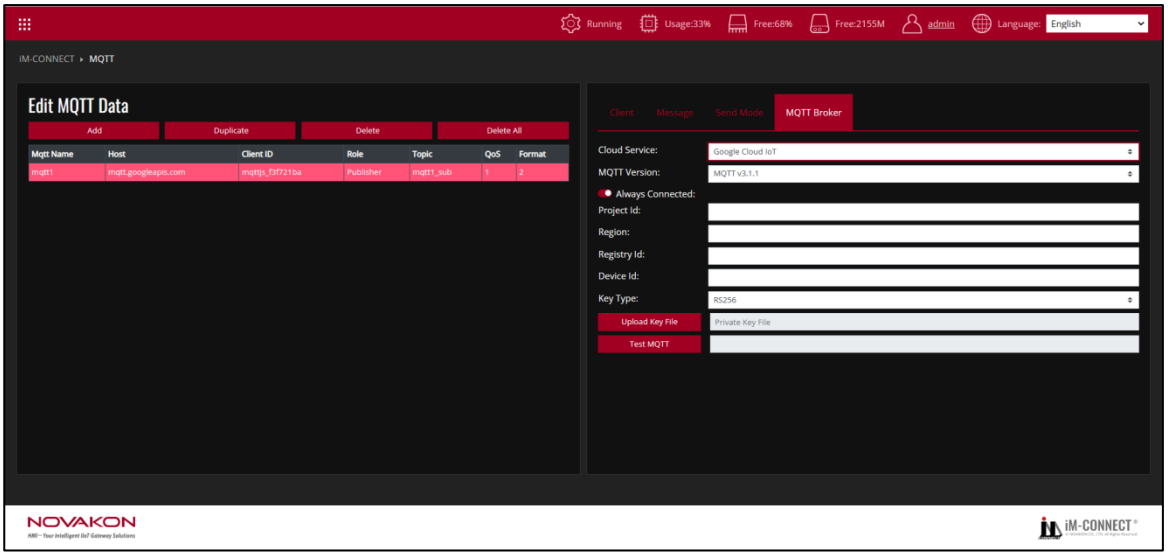
【Connection String】：Input the 【Connection String】 acquired from Microsoft Azure IoT Hub.

【MQTT Version】：Set the corresponding MQTT version.

【Always Connected】：Set the MQTT to be always connected.

【Test MQTT】：Show the messaged received after MQTT publish.

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【Google Cloud IoT】: Set Google Cloud IoT Core as Broker, input the required parameters and certificate for connection.

【MQTT Version】：Set the corresponding MQTT version.

【Always Connected】：Set the MQTT to be always connected.

【Project ID】：Input the Project ID to be used.

【Region】:Select the region of cloud service. Now only【us-central1】,【europe-west1】and【asia-east1】are available.

【Registry ID】：Input the registry ID created in Google Cloud

【Device ID】：Input the device ID.

【Key Type】：Select the key type between【RS256】and【ES256】

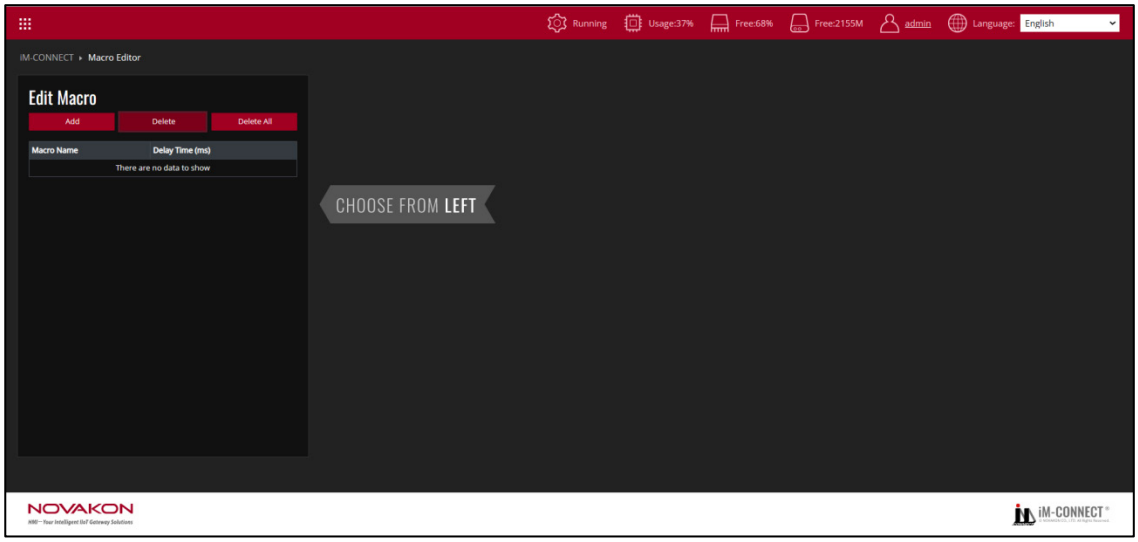
【Upload Key File】：Upload the assigned key file.

【Type MQTT】：Show the message received after MQTT publish

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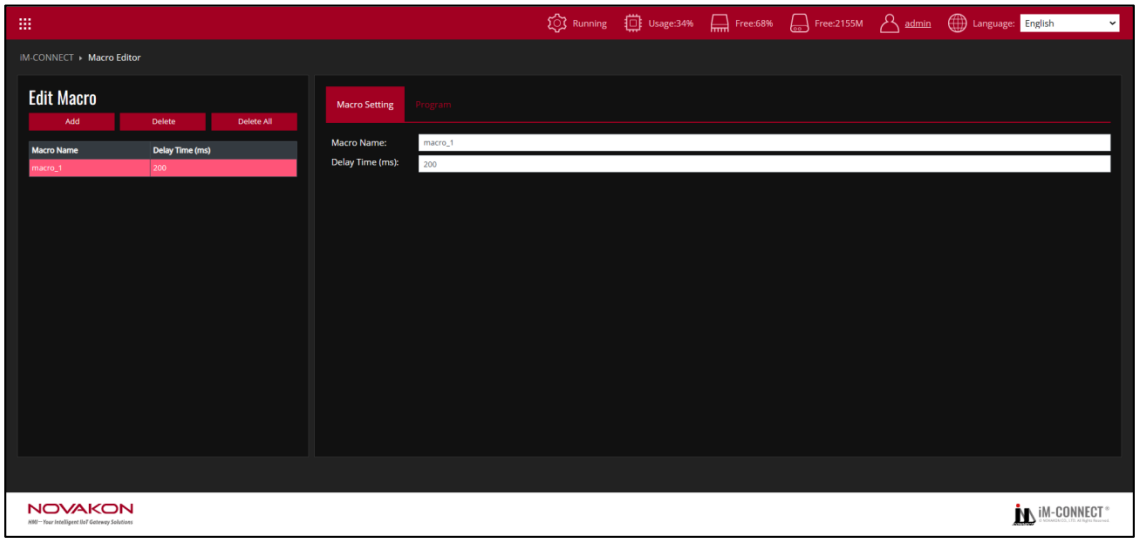
8. Edit Macro

Edit Marco can perform arithmetic operation, data transfer , and other actions for the Gateway's tag.



【Add】：Add a set of macro programming.
【Delete】：Delete the selected macro programming.
【Delete All】：Delete all the macros.

Start writing a set of macro programming after selecting【Add】.

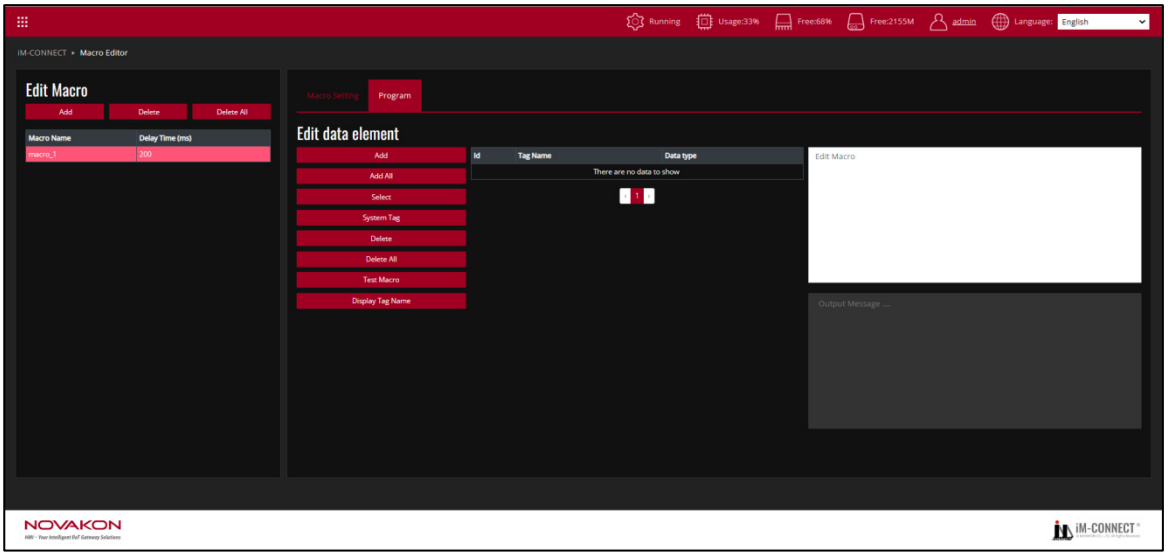


【Macro Setting】

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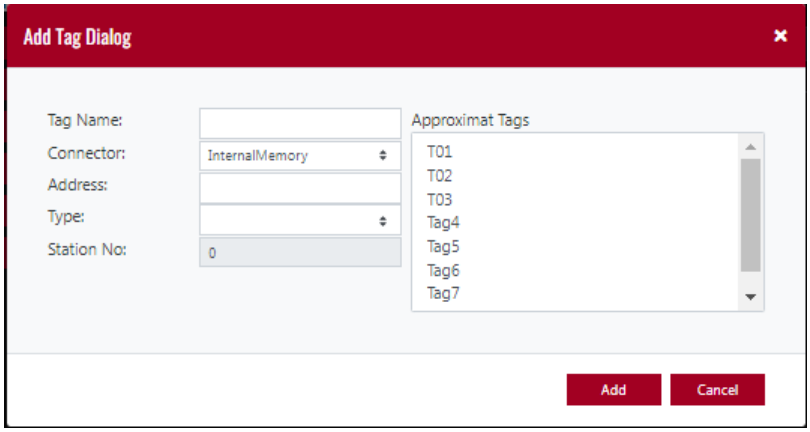
【Macro Name】：Set the name of the set of macro programming.

【Time (Secs)】：Set how long it delays after a regular loop of macro programming complete before starting the next loop.



【Edit data element】

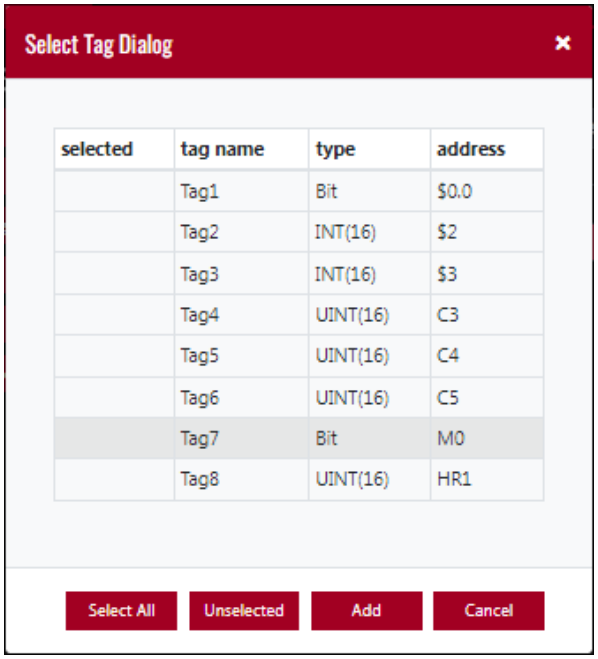
【Add】：Add the tag(s) needed in the macro programming. The newly added tag(s) will also be set in the Tag Setting page.



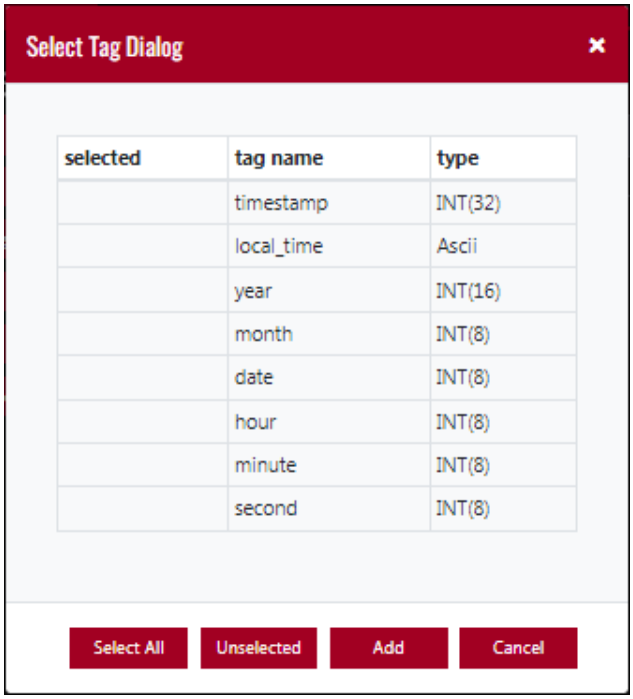
【Add All】：Add all the tags existing in the project.

【Select】：Select the tag(s) needed in the Macro Programming from the list of tags.

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【System Tag】：Select the system tag(s) required in the macro programming from the list of tags.



【Delete】：Delete the selected set of macro programming.

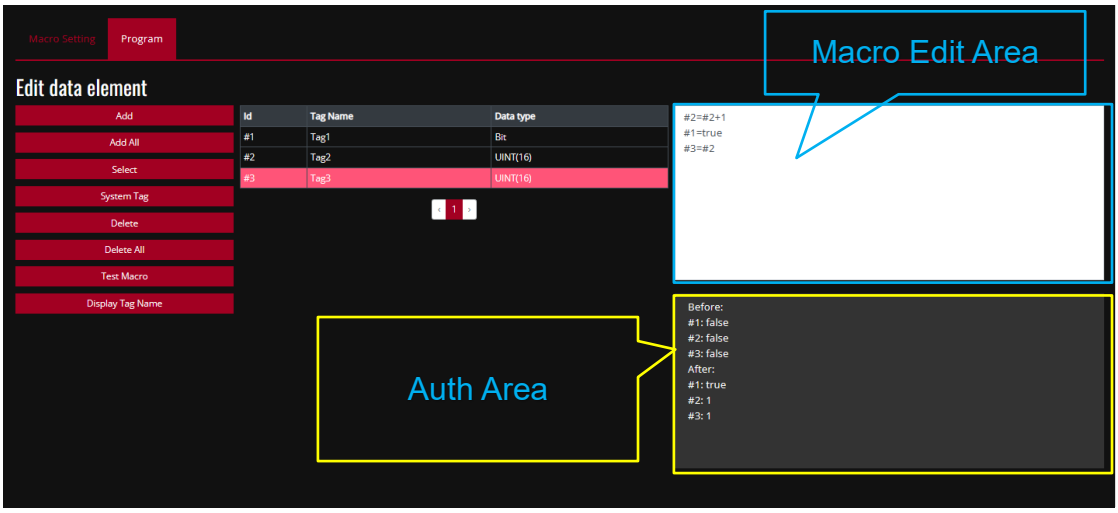
【Delete all】：Delete all the macro programming.

【Test Macro】：Verify the results of the macro programming performance test.

【Display Tag Name】：Change the display from ID number to Tag Name in Macro Edit

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Area (Marco Edit Area becomes read only when it is changed to display Tag Name)



【Macro Edit Area】：The user can write the macro programming here.

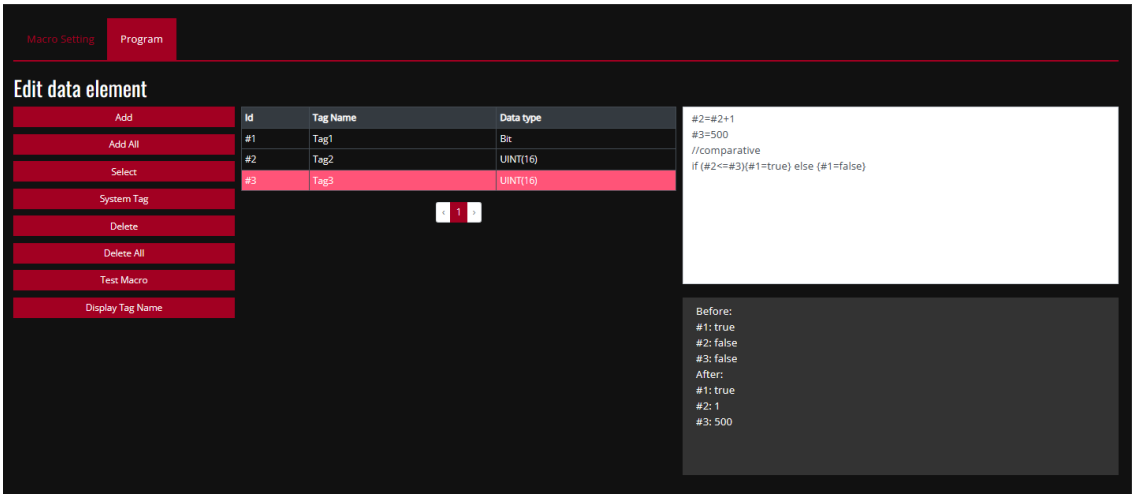
【Auth Area】: The results from the macro programming performance can be learned in the Auth Area after the【Test Macro】is selected.

For example：As shown in the diagram above, it can edit simple expressions. For the variables (tags), the corresponding ID must be input. At the same time, if the data type is Bit (Boolean), the condition must be expressed in 【true】(lower case) or【false】(lower case).

To add Notes, express it with 【//】.

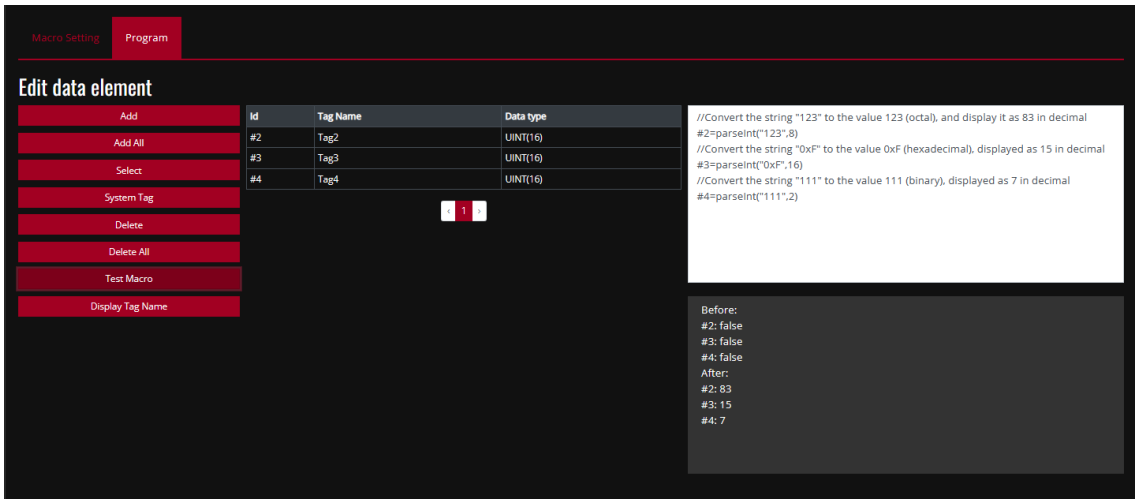
To add conditional execution, express it with 【if (conditional execution body){Results executed after the conditional execution statement is set up } else {Results executed after the conditional execution statement is not set up }】

For example：

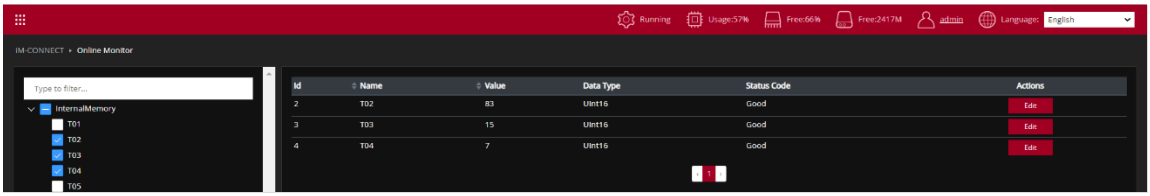


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iM-connect can support elements of JavaScript, such as Number, Date, Math, etc.
The following is an example of base conversion by using JavaScript function 【parseInt】:

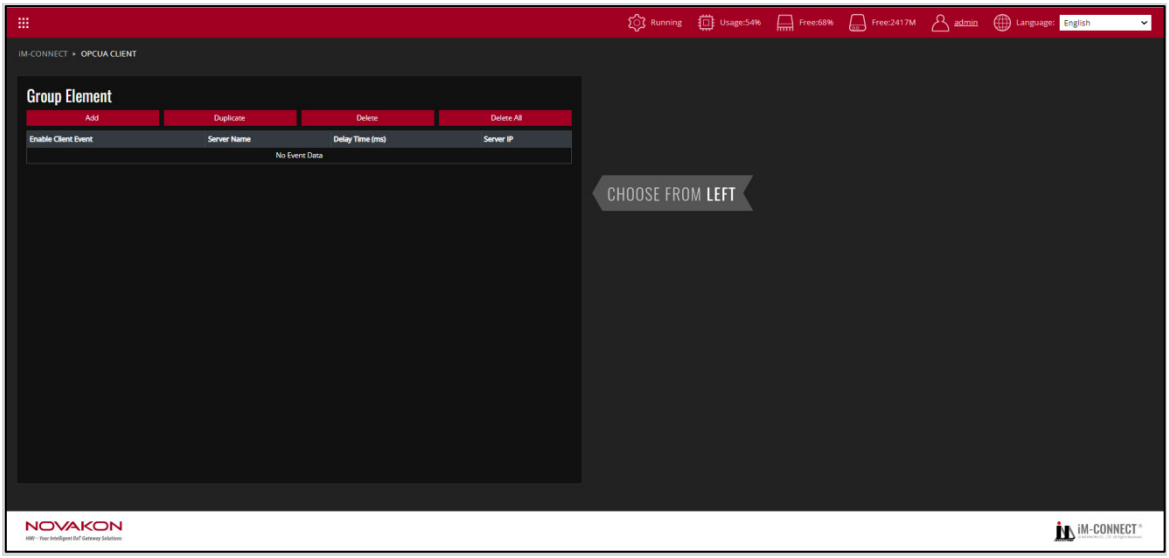


① 【Add】 or 【Select】 the needed tag.
② Write the program.
③ Go to【Project Setting】to execute【Save & Compile】 and 【Enable Service】.
④ After selecting 【Test Macro】, you get the correct result.
⑤ Enter 【Online Monitor】 to monitor the actual tag values. The results must be consistent with the results of Test Macro.



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9. OPCUA Client



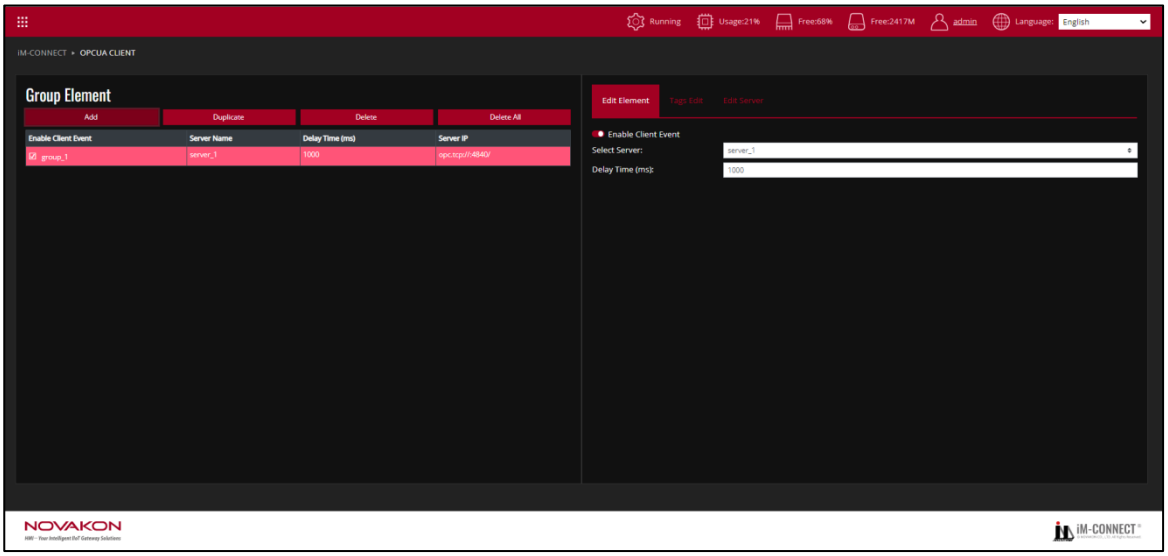
【Add】：Add a set of OPCUA Client.

【Duplicate】：Duplicate the selected setting of the set of OPCUA Client.

【Delete】：Delete the selected setting of the set of OPCUA Client.

【Delete All】：Delete all the events of OPCUA Client.

Start the OPCUA Client setting after selecting 【Add】.

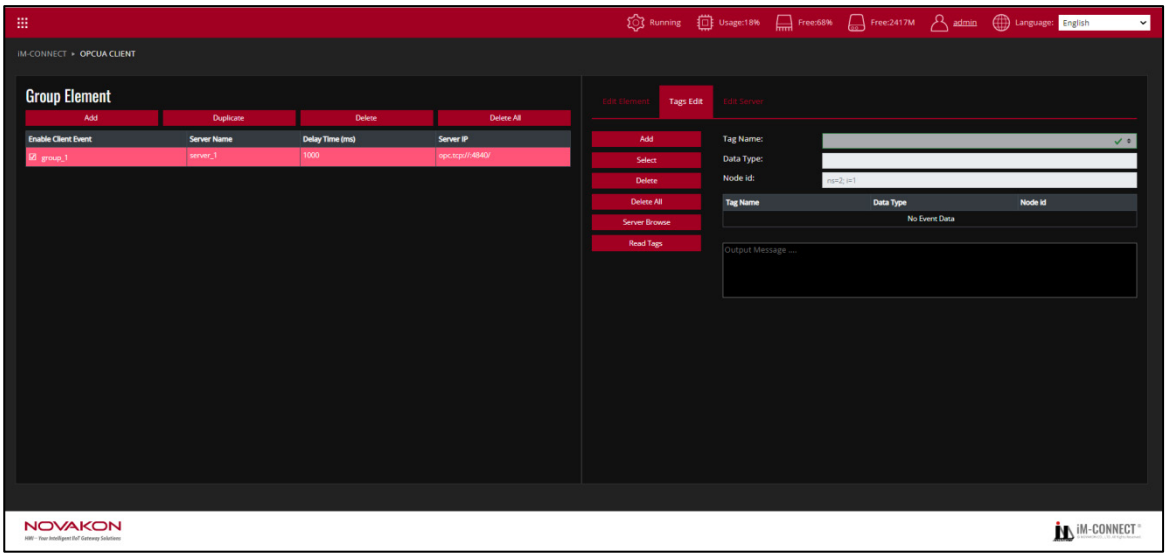


【Edit Element】：Definite a OPCUA event.

【Enable Client Event】：Enable a OPCUA Client item.

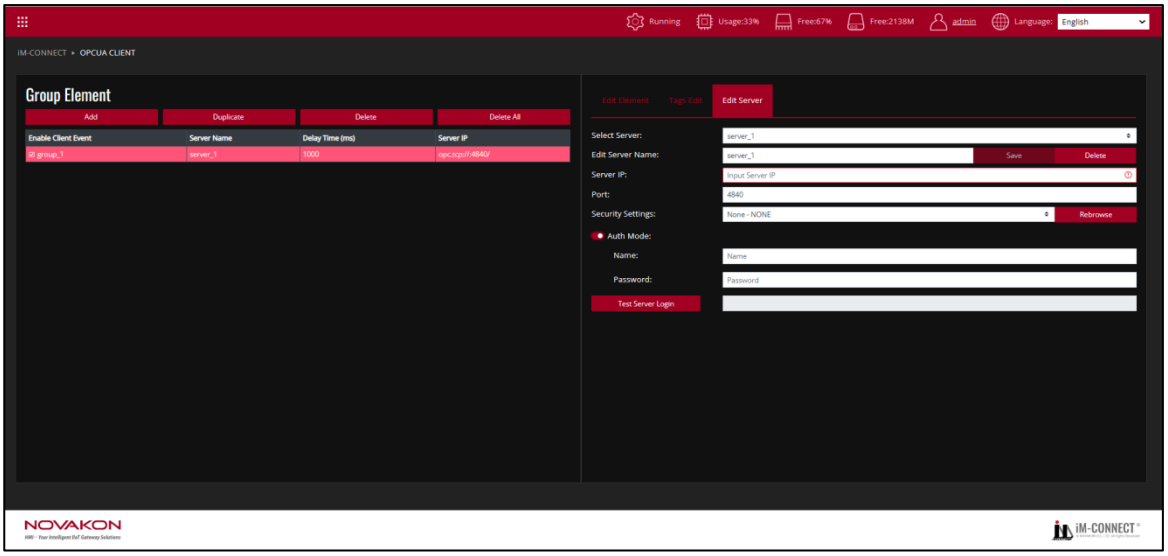
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【Select Server】：Select the name of the OPCUA Server to be connected with.
【Delay Time】：Set OPCUA delay time.



【Tags Edit】
【Add】：Add a tag as the monitor of OPCUA Client.
【Select】：Select an already established tag as the OPCUA Client.
【Delete】：Delete the selected tag(s).
【Delete All】：Delete all the tag(s) of this event.
【Server Browse】：Import the selected tags from OPCUA server.
【Tag name】：It shows the tag name of the OPCUA Client.
【Data Type】：It shows the tag type of the OPCUA Client.
【Node ID】: Input the Node ID of the element address on the OPCUA Client. The names defined by each equipment may differ, so it shall be input based on each of the definitions.
The established Tag Name, Data Type, Node ID, Output Message, and other data are listed in sequence below.

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【Edit Server】：Define the relevant data of the OPCUA Server.

【Select Server】：Select the name of the OPCUA Server to be connected with.

【Edit Server Name】：Edit the name of the OPCUA Server.

【Server IP】：Input the IP of the OPCUA Server to be connected with.

【Port】：Set the port number of the OPCUA Server.

【Security Settings】：Set the security mode for communication according to the connected Server.

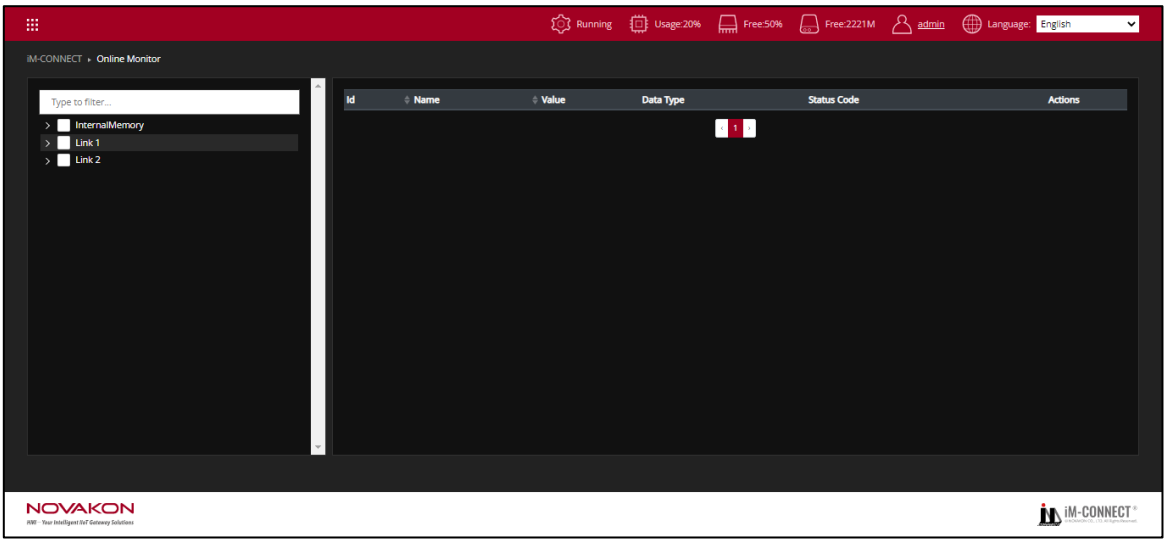
【Auth Mode】：Select whether the to-be-logged-in OPCUA Server needs an authentication. If it needs authentication, input the account name and password to be logged in.

【Test OPC UA Server】：Test connection status after selecting it.

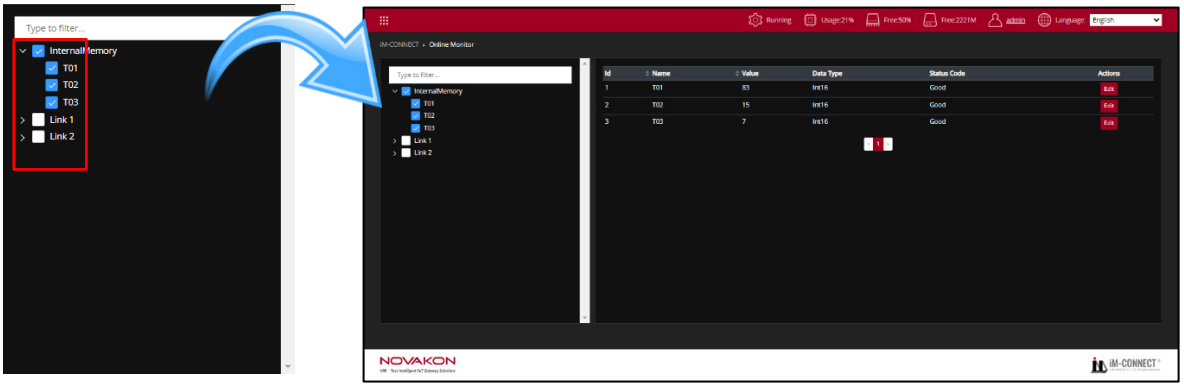
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10. Online Monitor

The main function of 【Online Monitor】 is to monitor the current tag values from the controller that connected to GATEWAY.

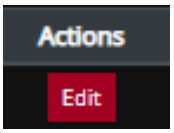


First, enter 【OPCUA】 from the 【iM-CONNECT Menu】.
The left window displays a list of all tags of the current project.
Click 【 > 】 to expand or collapse the list. Next, click the box 【 】 next to the tag to monitor the tag's current value in the right window.



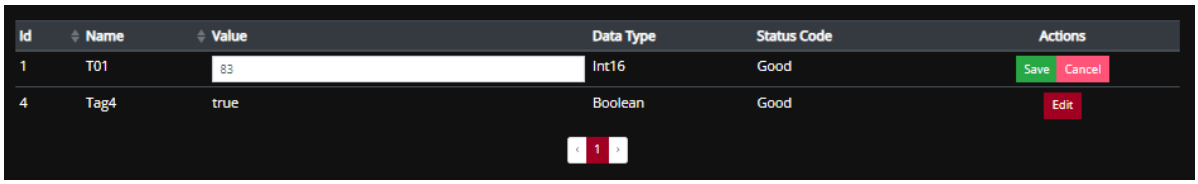
The current tag value can be monitored in the right window. To update the GATEWAY data during the monitoring process, click 【Edit】 at 【Actions】 to modify the tag status value.

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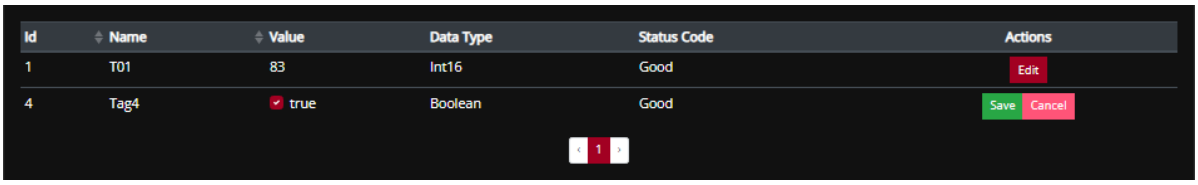


If the modified tag is 【int16】, after clicking 【Edit】 at 【Actions】, set the value to be modified in the box【Value】. After finishing, click【Save】to write the value to GATEWAY. To cancel writing the value to GATEWAY, click 【Cancel】.

After modifying the status or value of the tag, click the blank space next to it to complete the modification setting.



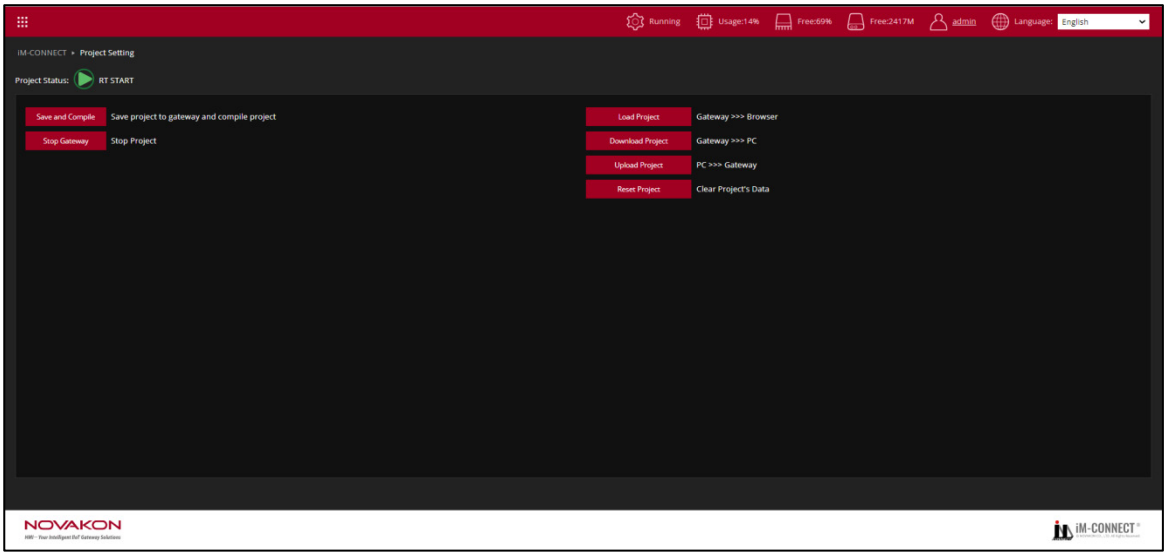
If the modified tag is 【Bit】, after clicking 【Edit】 at 【Actions】, the 【Value】 can be checked as 【true】 (1, ON) or unchecked as 【false】 (that is, Is 0, OFF). After finishing, click 【Save】 to write the value to GATEWAY. To cancel writing the value to GATEWAY, click 【Cancel】.



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11. Project Setting

The project setting is mainly used to perform related actions such as【Save and Compile】, 【Run & Stop】, 【Load Project】 , and【Download/Upload】of the project.



【Project Status】：Display the current status of GATEWAY (RT) operation.

【Save and Compile】：Save the edited tag data to GATEWAY for verification.
【Run/Stop Gateway】：Run or stop the GATEWAY (RT) operation
【Load Project】: Load the GATEWAY data into the web page for later tag edit, modification or add action.
【Download Project】：Load all current data back to the computer.
【Upload Project】：Return all current data to GATEWAY.
【Reset Project】: Clear all the settings and parameters of the project (Username, password, and IP address will not be affected).

Note： **Please remember to press 【Load Project】 to load the returned data to the Web page** after downloading the previous data to the computer with 【Download】 or after updating the originally set IP. Otherwise, the content seen on the web page would not be updated synchronously.

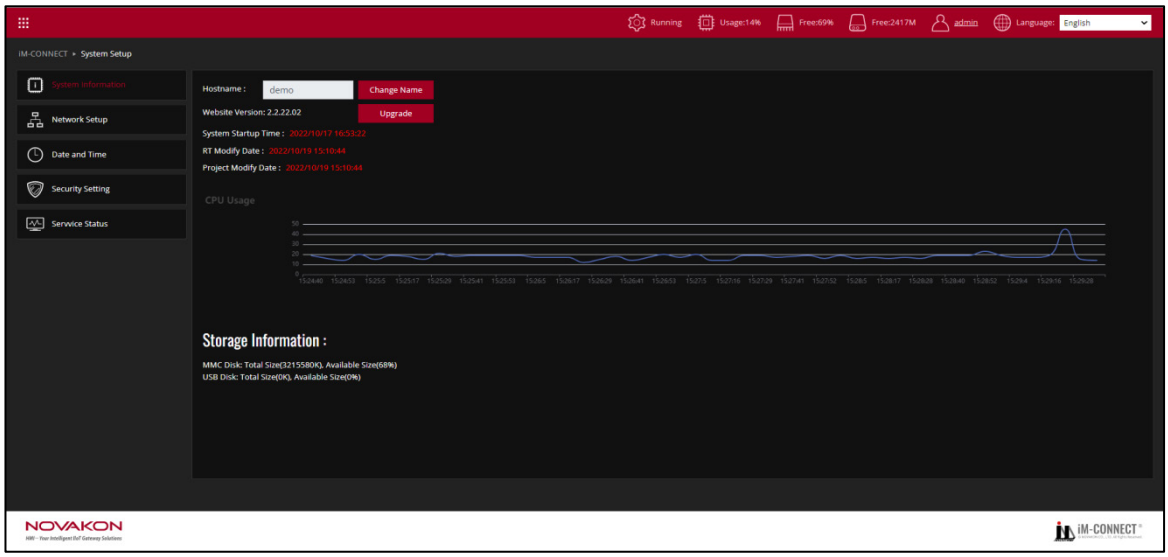
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12. System Setting

This is where to view current GATEWAY-related information and settings, including network settings, date & time settings, security settings, etc.

12.1 System Information

Click on each page to view information about the currently connected GATEWAY.



【Hostname】：Click the button of【Change Name】to modify the host name. After modification, click 【Submit】to complete. This host name can be used for log in IP address for the web browser. For instance, if the host name is set as 【demo】, enter 【http：//demo.local】on the browser to access the webpage.

【Website Version】：Display the current website version. By clicking the button of【Upgrade】, you can upgrade the system to the latest version.

【System Startup Time】：The last startup time of this system.

【RT Modify Date】：The time when RT is last modified.

【Project Modify Date】：The time when project is last modified. If this time is consistent with RT Modify Date, it means the project content on the server and your webpage are aligned. If this time is different from RT Modify Date, it means you have modified the project content during the RT operation, you need to compile and save and compile and

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re-start the project.

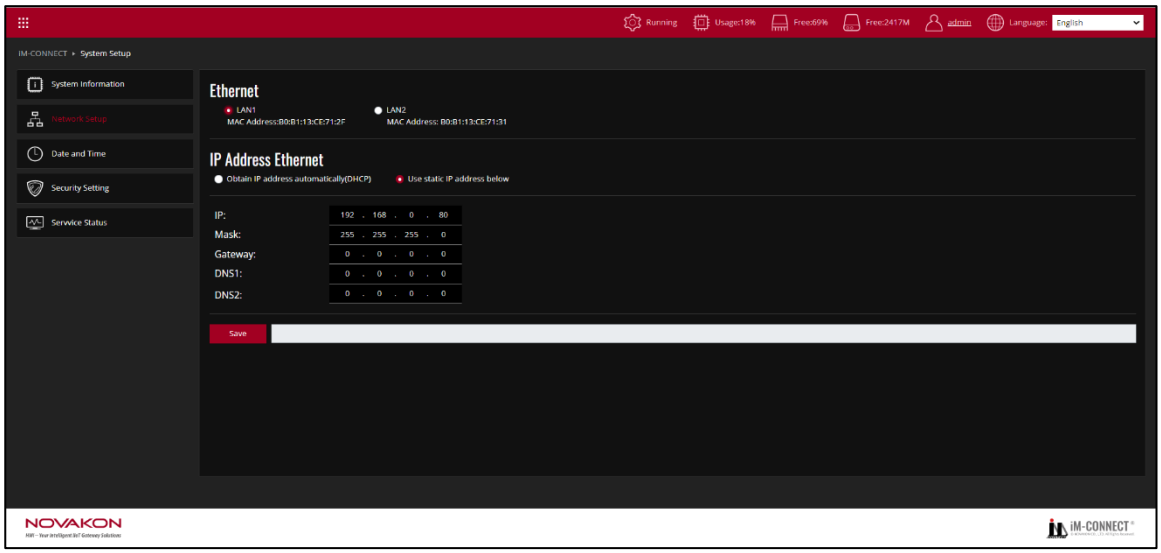
【CPU Usage】：Display the CPU usage with trend chart.

【Storage Information】: Display total and remaining capacity of eMMC (Embedded MMC) and USB Disk

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12.2 Network Setup

Press 【Network Setup】 to set the network parameters of GATEWAY.



Ethernet

Set the IP Address, Mask, Gateway, DNS for【LAN1】and【LAN2】respectively. After finishing the setting, press 【Save】 to save the contents of the current setting.

IP Address Ethernet

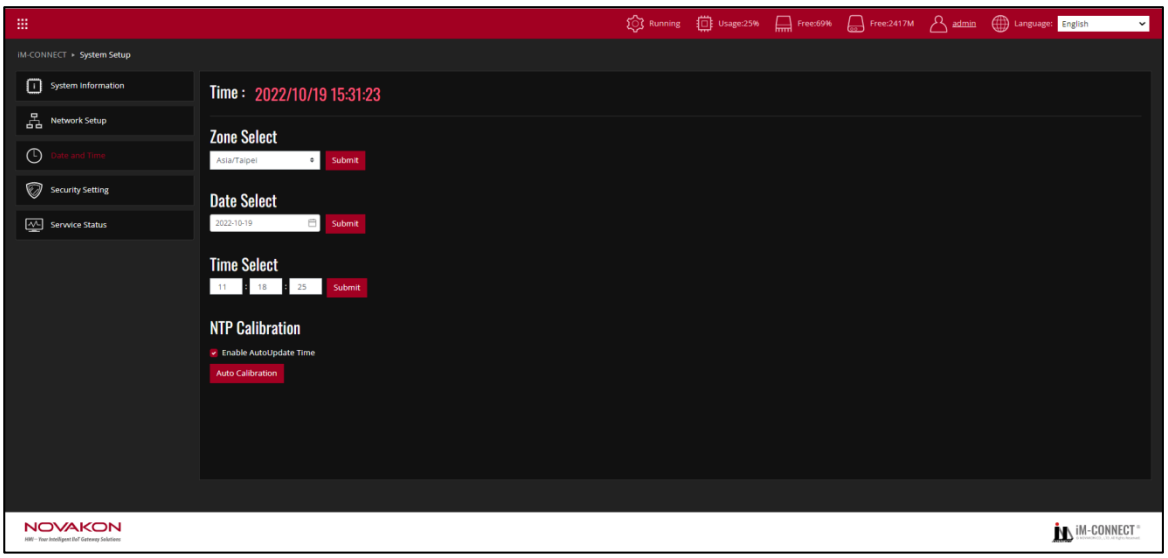
【Obtain IP address automatically (DHCP)】：IP address assigned by system.
【Use static IP address below】：IP address defined by user.

After the IP setting of each group is completed, press 【Save】 to save the setting value to GATEWAY.

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12.3 Date and Time

Set the date and time of the GATEWAY.



【TIME】：Displays current time and date of the system

【Zone Select】: Choose the current location and country. After setting, press【Submit】to save the current setting.

【Date Select】: Set the current system date of GATEWAY. After finishing the setting, press 【Submit】 to save the current setting.

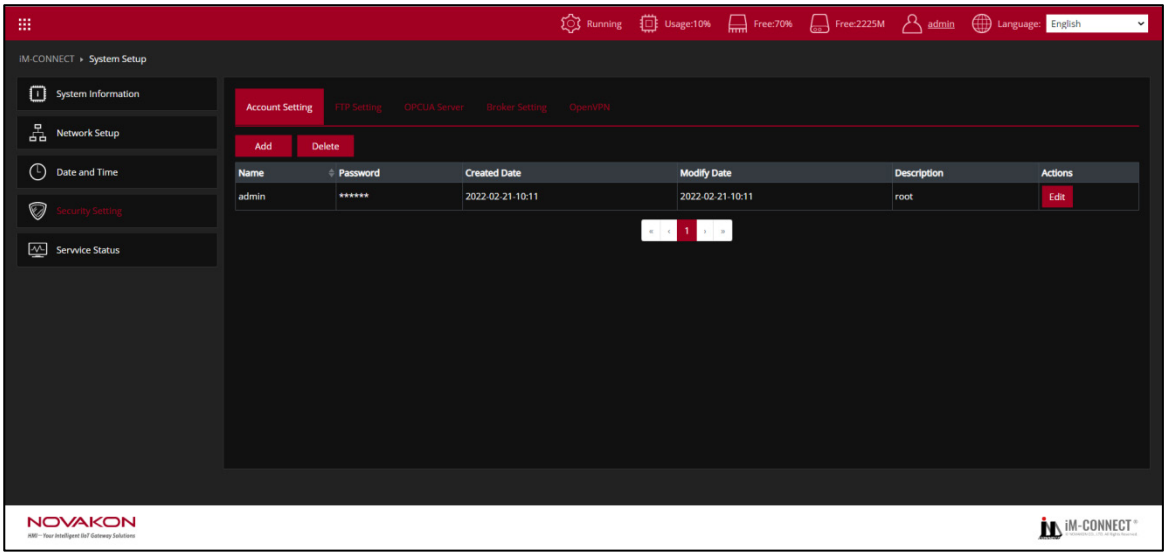
【Time Select】: Set the current system time of GATEWAY. After finishing the setting, press 【Submit】 to save the current setting.

【NTP Calibration】：Check the box to synchronize with network time. Press 【Auto Calibration】to synchronize the date and time of the GATEWAY system with the network time.

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12.4 Security Setting

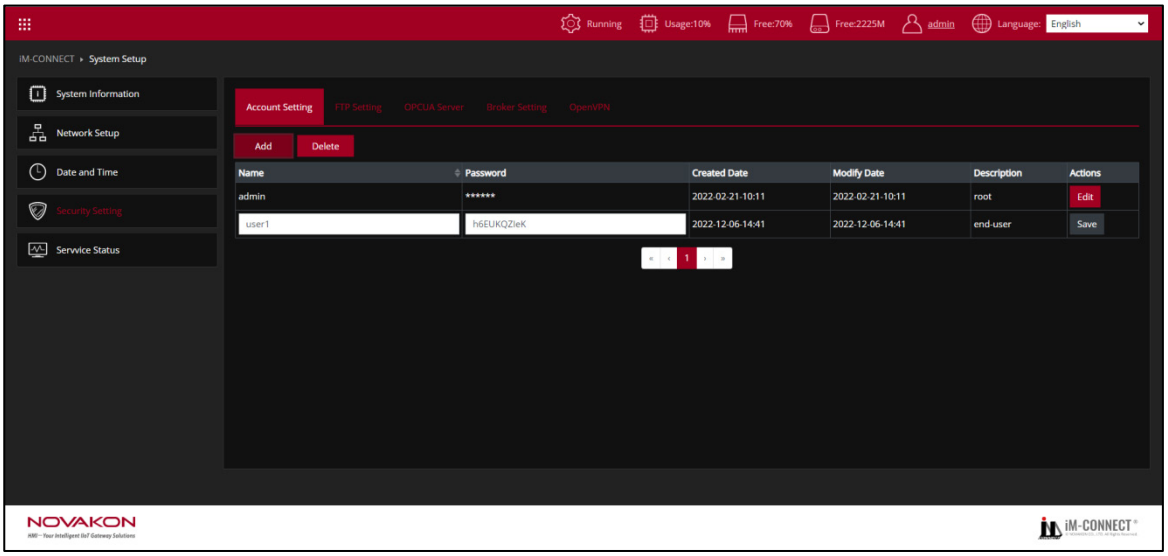
Set the login GATEWAY username and password of the account and 【FTP】, relevant settings of MQTT【Broker】and OpenVPN.



【Account Setting】：Add or Delete usernames and passwords. Username can be set as【root】or【end-user】. Log in as【root】can access all the functions；as【end-user】only display basic functions.

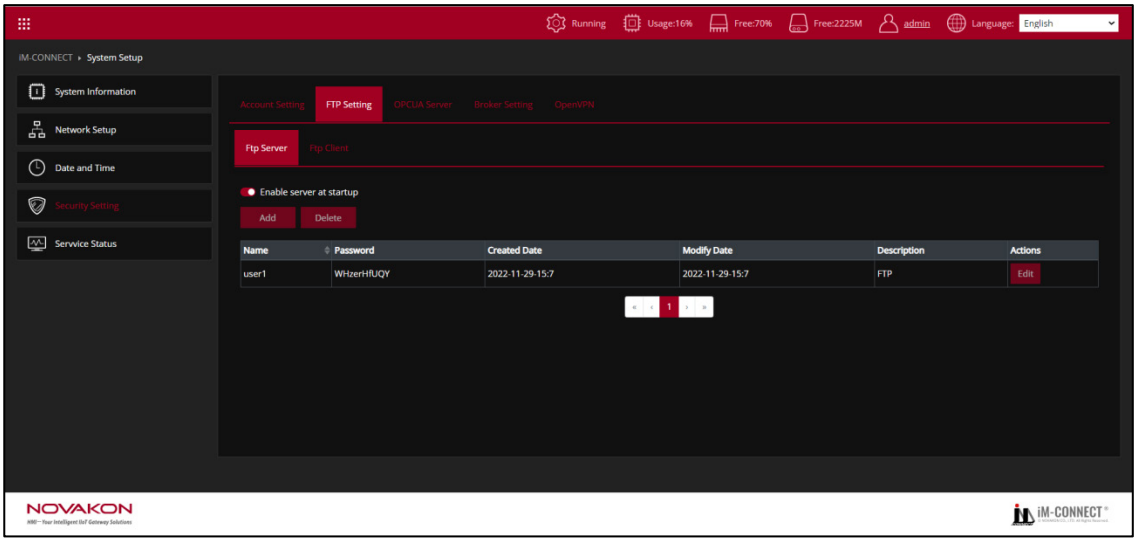
【Add】：Add a new set of username and password with【end-user】access.

【Delete】：Delete a set of username and password.



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【Edit】：Modify username and password. Press【Save】when editing is completed. System will automatically log out for user to log in with modified username and password.



【FTP Setting】：Add or Delete FTP username and password.

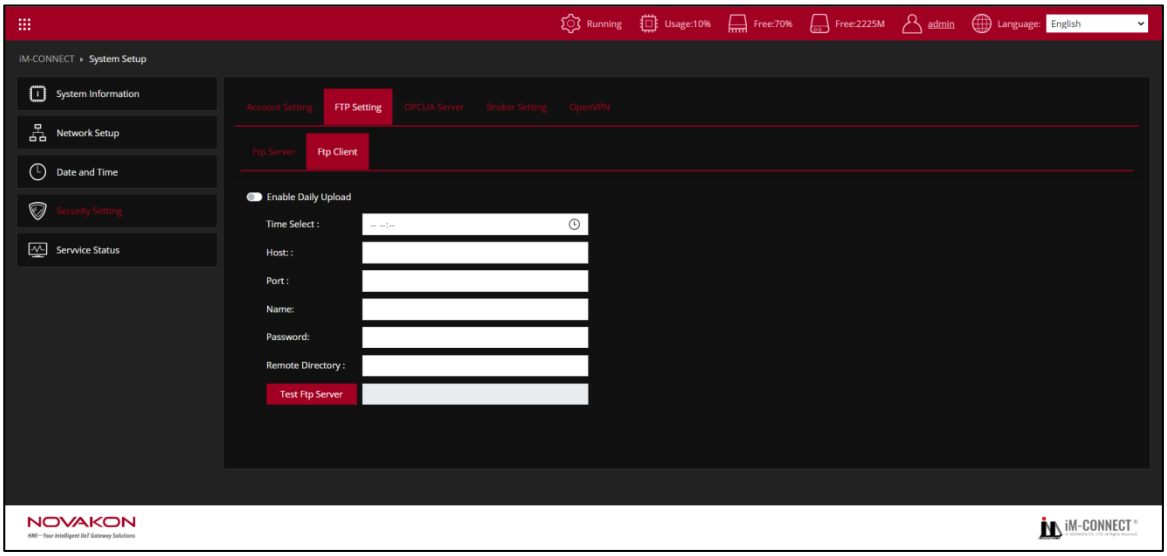
【FTP Server】：Set the gateway as FTP Server with related information.

【Enable Server at project Startup】: Check the box to enable FTP, in which data log file can be accessed.

【Add】：Add a new set of FTP username and password.

【Delete】：Delete a set of FTP username and password.

【Edit】: Modify FTP username and password. Press【Save】to complete the modification.



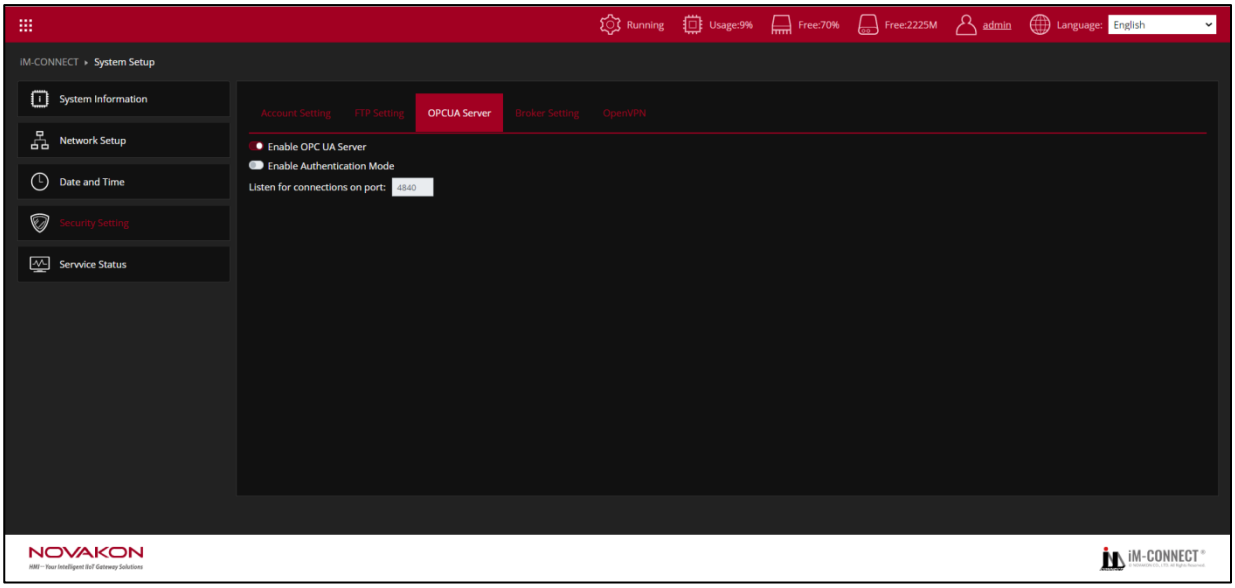
【FTP Client】: Set gateway as FTP Client with the condition and related information of FTP Server, to which gateway send data through Internet.

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【Enable Daily Upload】: Set the time that gateway uploads data (Datalog/Alarm History) to FTP server everyday.

【Time Select】：Click the Clock icon to set the time
【Host】：Input the server's name for connection
【Port】：Input the port number of the server to connect.
【Name】：Input the FTP client username.
【Password】：Input the FTP client password.
【Remote Directory】：Input the remote directory of FTP server for upload.
【Test Ftp Server】：Click to test the connection to FTP server

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【OPCUA Server】：Set GW-01 as a OPCUA Server.

【Enable OPC UA Server】：Enable the OPCUA Server.
【Enable Authentication Mode】：Input the username and passcode when it is enabled.

【Listen for connections on port】: Set the port on which the OPC UA Server is listening for connection requests of OPC UA Clients. The default port is【4840】.

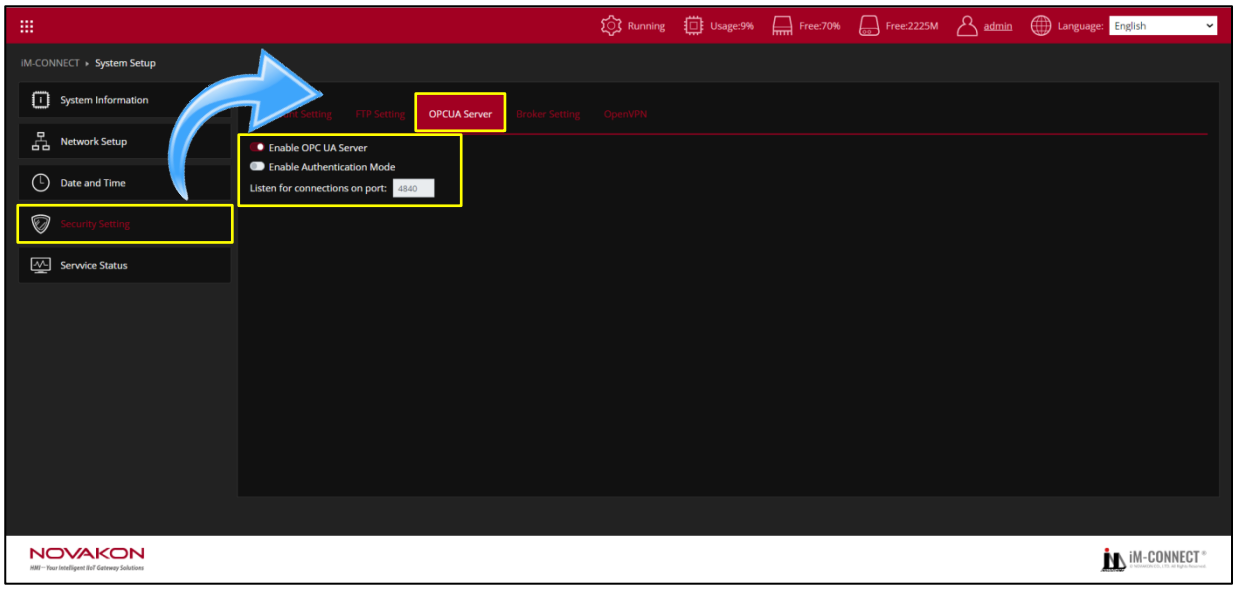
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【Example】Take two GW-01, one as OPCUA Server, another one as OPCUA Client to test the connection.

A. OPCUA Server Settings (IP address 192.168.90.94)

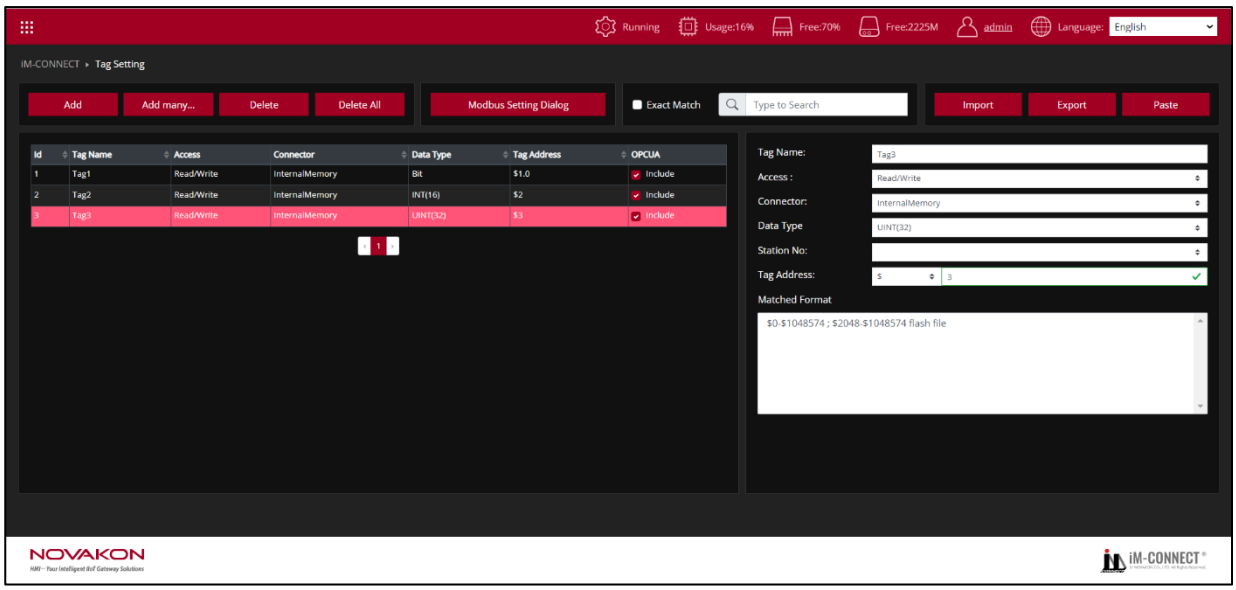
- Click upper left corner to open the menu. Click【System Setup】.
- Click【Security Setting】→【OPCUA Server】, Click 【Enable OPC UA Server】, Listen for connections on port to default【4840】.

(Before changing the state of 【Enable OPC UA Server】, make sure the Project is stopped first.)

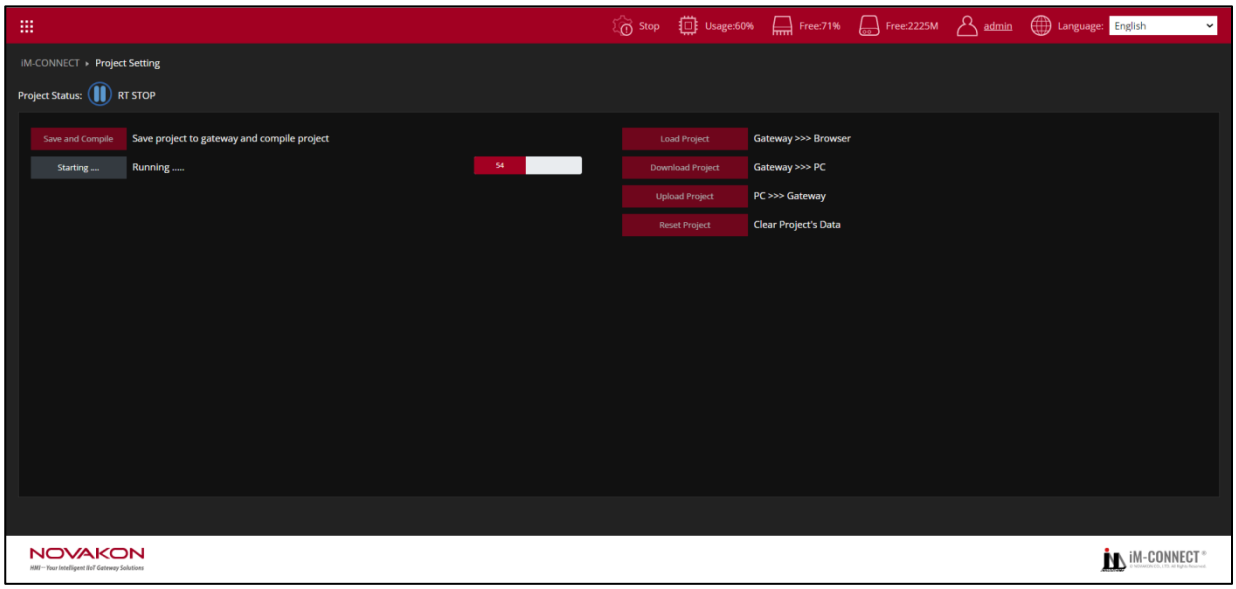


- Click upper left corner to open the menu. Click【Tag Setting】. Add three new tags with datatypes of Bit/INT(16)/UINT(32). For the details of Tag setting, please refer to Chapter 4【Tag Setting】.

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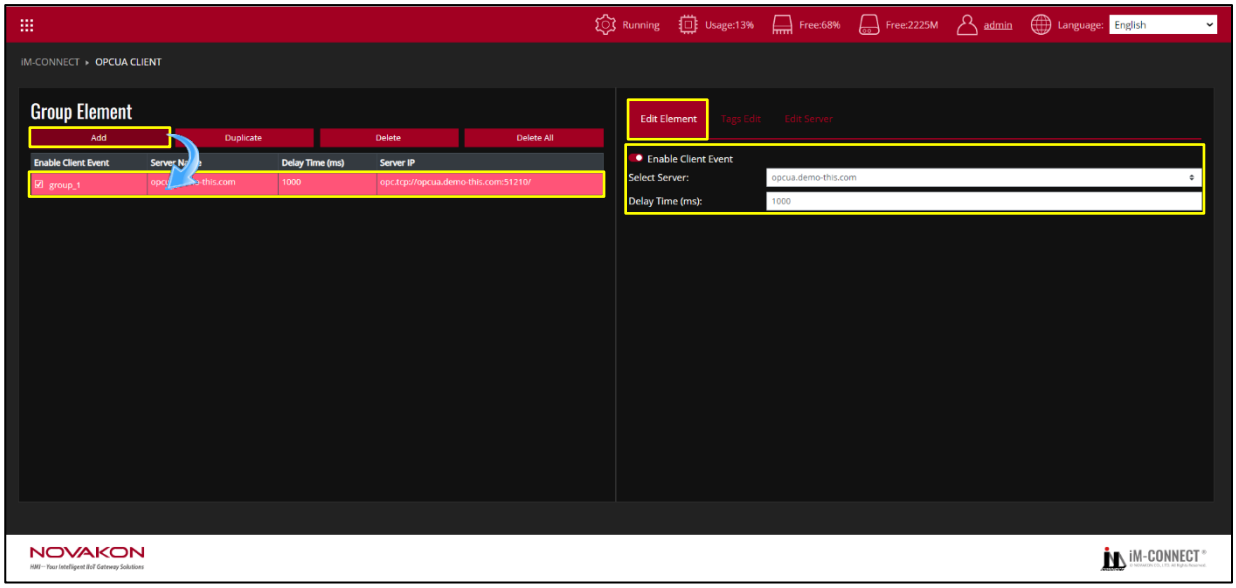
- After setting, go to【Project Setting】, click【Save and Compile】to GW-01 and【Start Project】。



B. OPCUA CLIENT Settings (IP address 192.168.90.118)

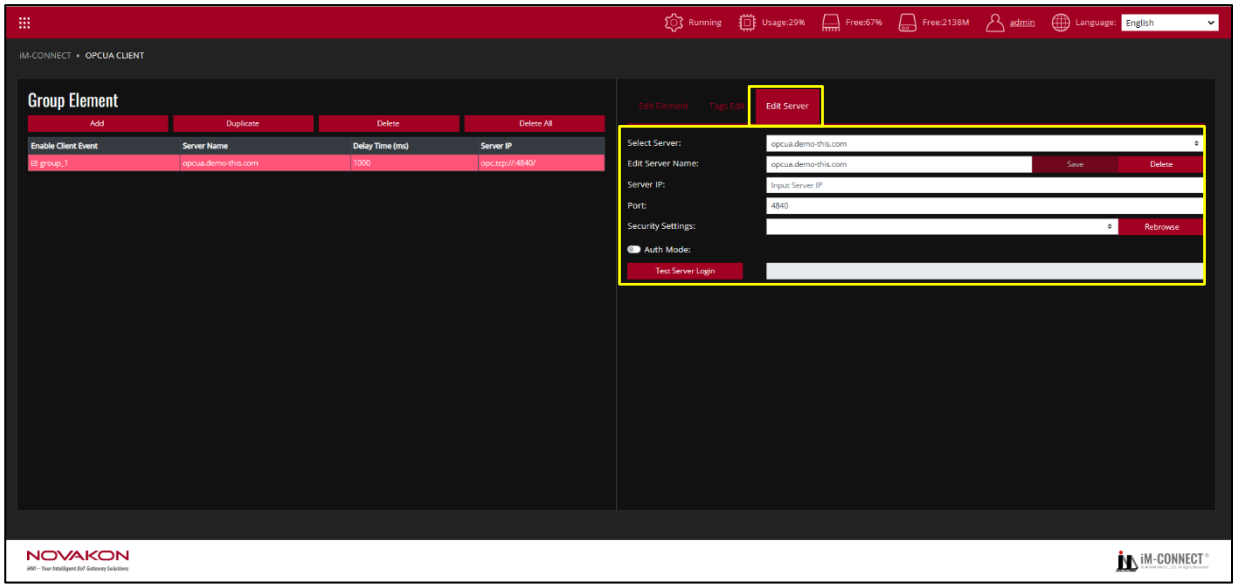
- Click upper left corner to open the menu, Click【OPCUA CLIENT】.
- Click【Add】to add an OPCUA item.
- Go to the right column 【Edit Element】, click【Enable Client Event】.

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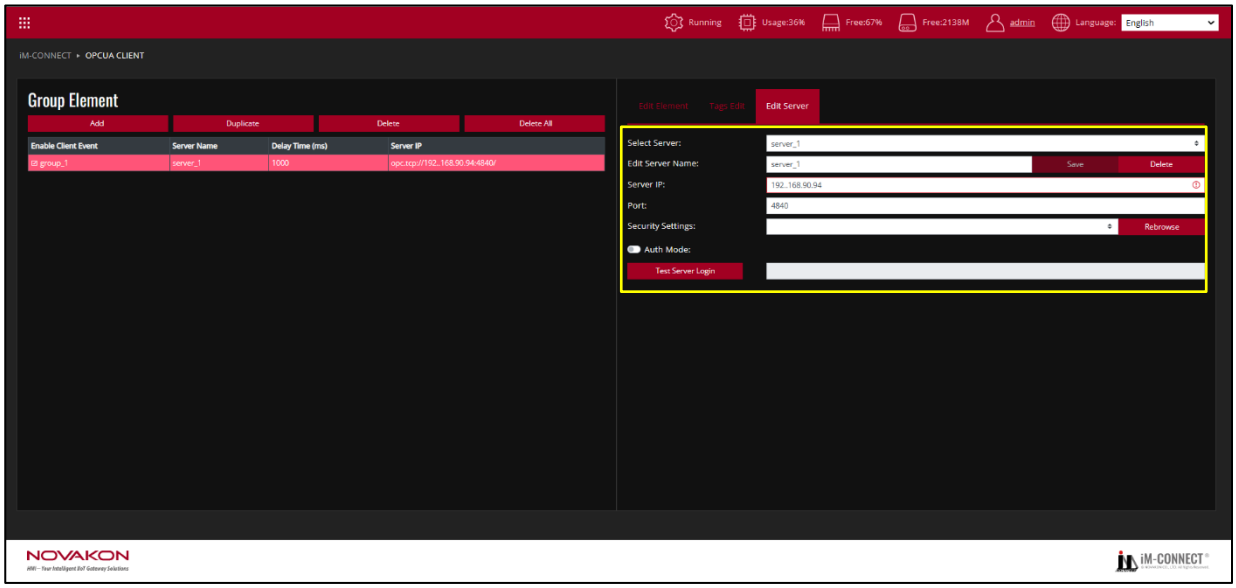


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Click 【Edit Server】, set the connection to OPCUA SERVER.
For the details of OPCUA CLIENT settings, please refer to Chapter 9【OPCUA CLIENT】

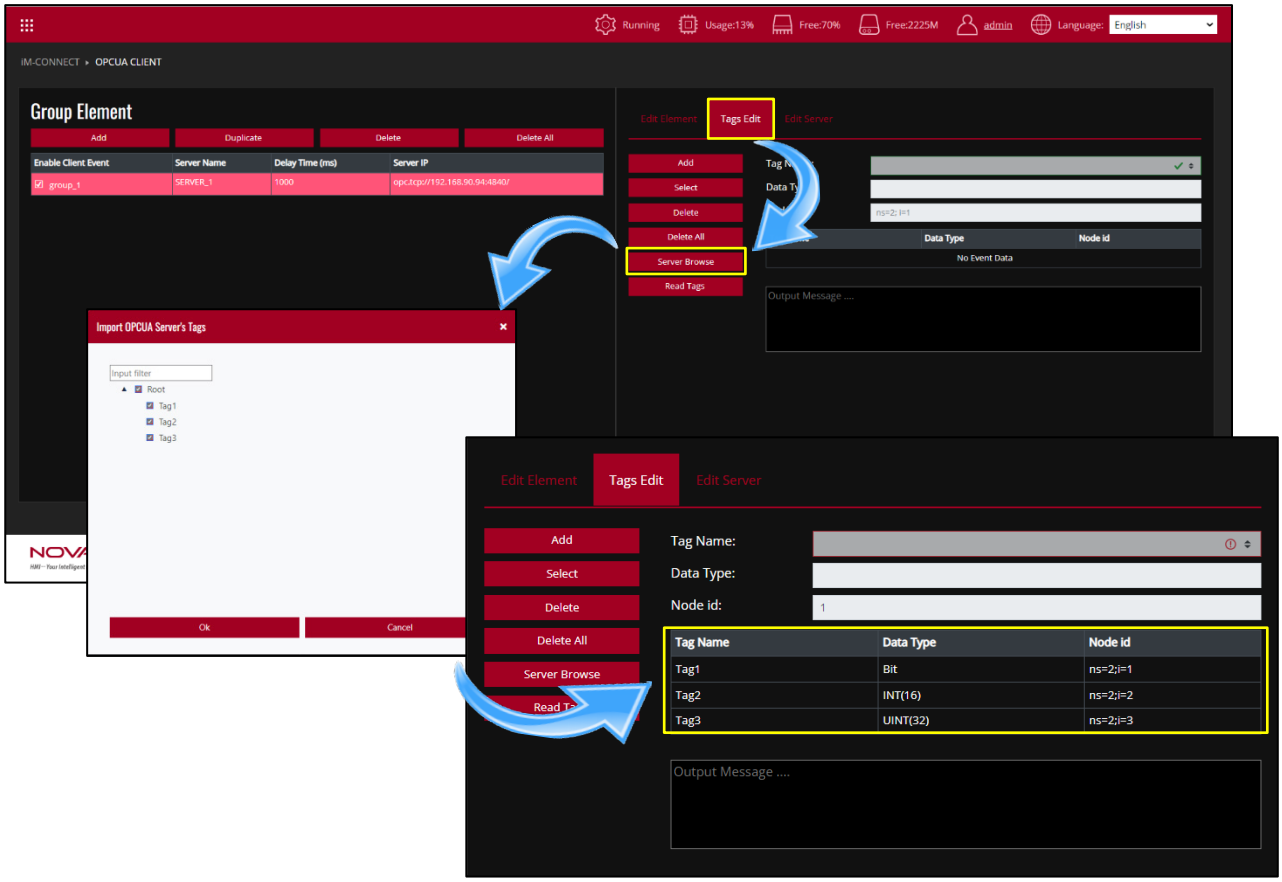


Click 【Edit Server】, set the connection to OPCUA SERVER.
For the details of OPCUA CLIENT settings, please refer to Chapter 9【OPCUA CLIENT】
After the setting is completed, press 【Test Server Login】. If the test is correct, 【Server connect successfully】 will be displayed.

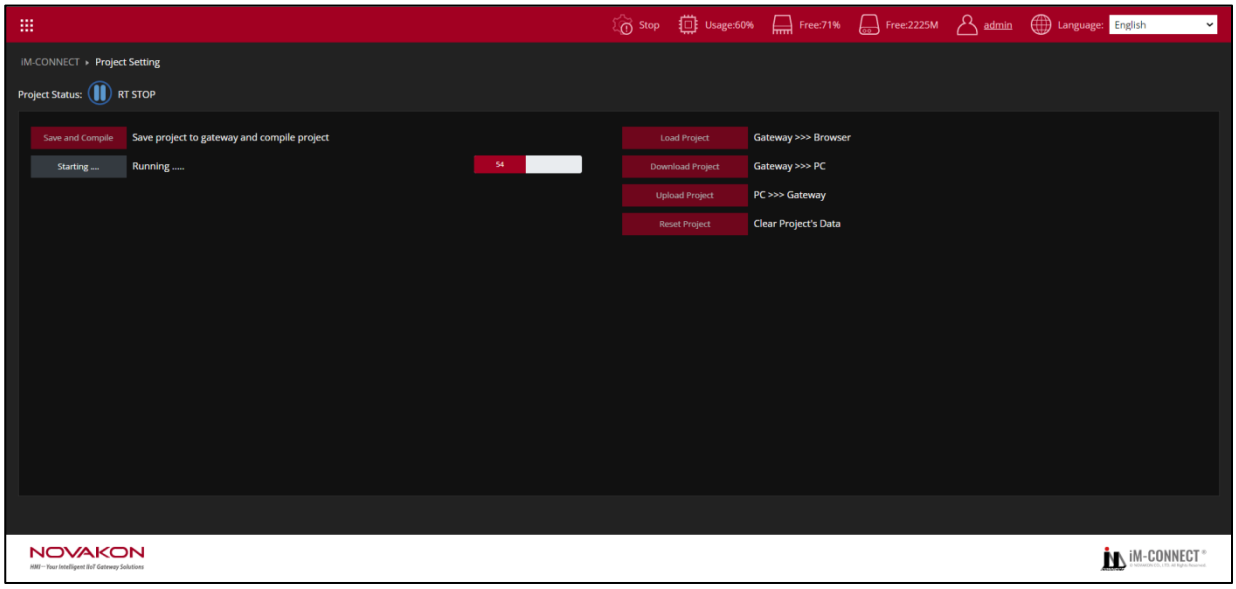


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- Switch to 【Tags Edit】. After clicking 【Server Browse】, you can see the tags created in OPCUA SERVER. Check the required tags and press 【OK】 to automatically add the tags of OPCUA SERVER to the OPCUA CLIENT device.



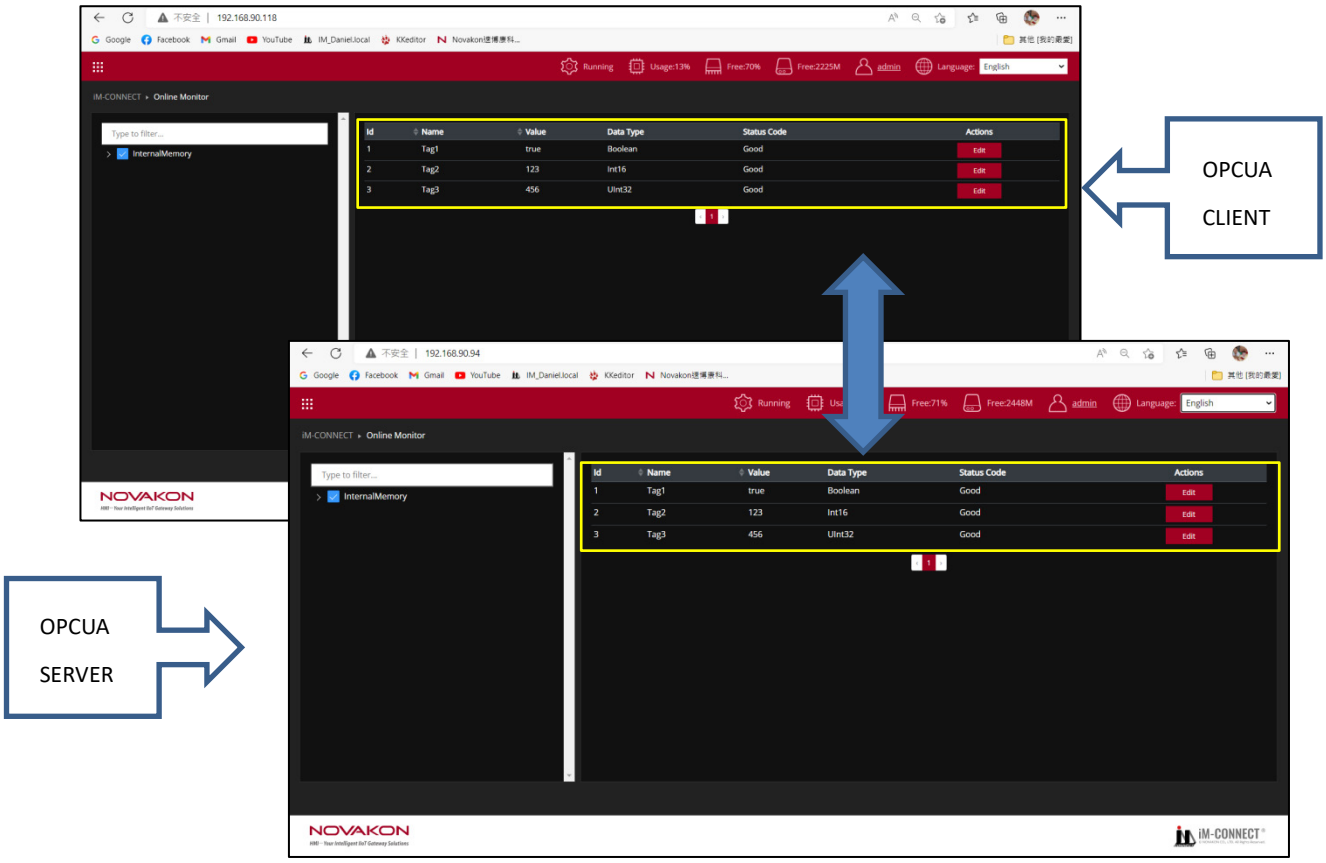
- After the setting is completed, you can go to【Project Setting】 to execute 【Save and Compile】 to GW01 and 【Start Project】.



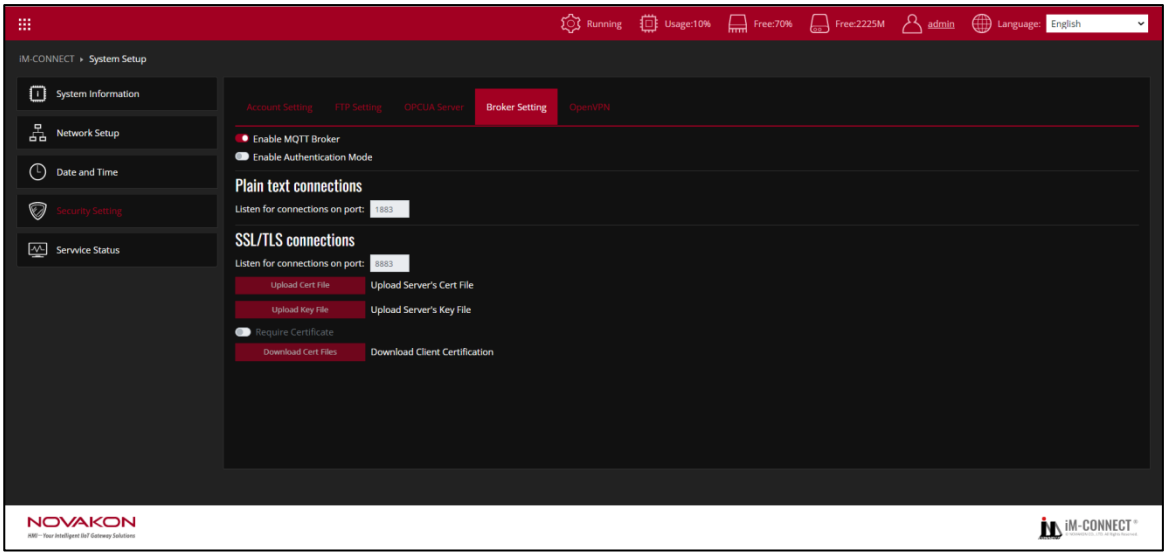
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C. Connection Test

- Connect two GW01 separately, click on the upper left to open the menu, and click 【Online Monitor】 to enter the monitoring screen.
- It can be seen from the 【Online Monitor】 that the two devices can monitor the tag value synchronously, which means that the connection through OPCUA has been successful.



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【Broker Setting】: When using the MQTT protocol for data transmission, GW01 can be set as a Broker (must be set as the Publisher).

【Enable MQTT Broker at RT Startup】：Enable MQTT Broker after clicking on it.
【Enable Authentication Mode】: To enable the MQTT Log In Verification Mechanism, click on it and enter the account name and password for authentication.
【Plain text connections】：Designate the listening port with unencrypted connection. The default is【1883】.
【SSL/TLS connections】: Designate the listening port with SSL encrypted connection. The default is【8883】.

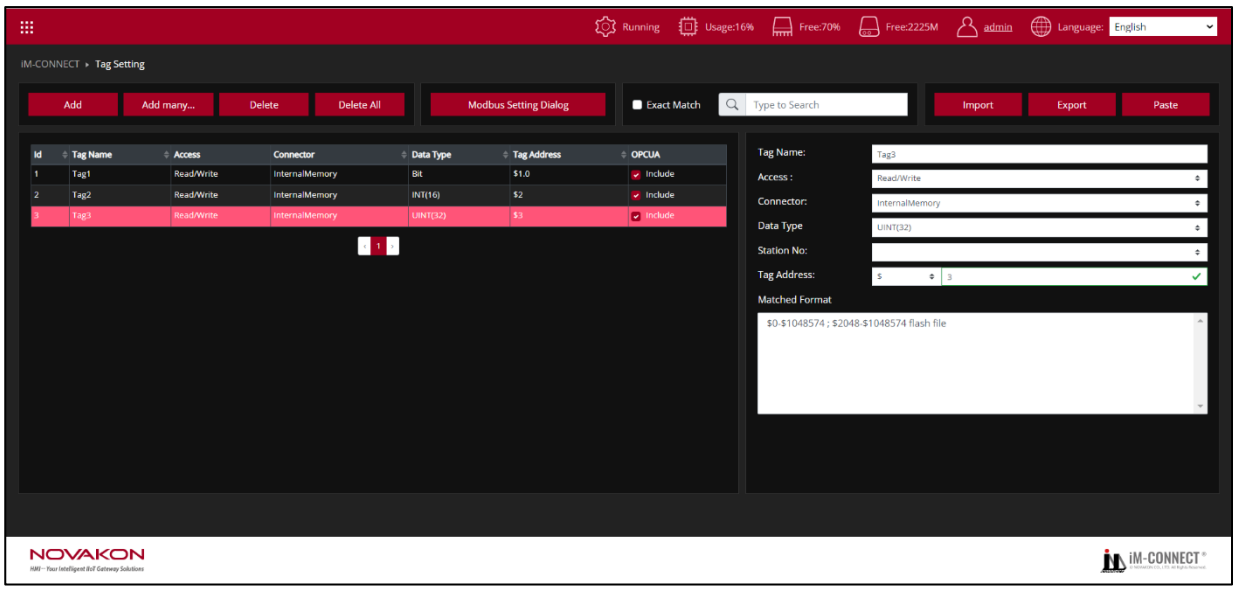
【Upload Cert File】：Import the verification certificate provided by the Server.
【Upload Key File】：Import the key provided by the Server.

【Require Certificate】：Download the certificate required for the log in.
【Save Setting】：Save the MQTT Broker setting.

【Example】 Take two GW-01 as an example, one is MQTT Subscriber and the other is MQTT Publisher.

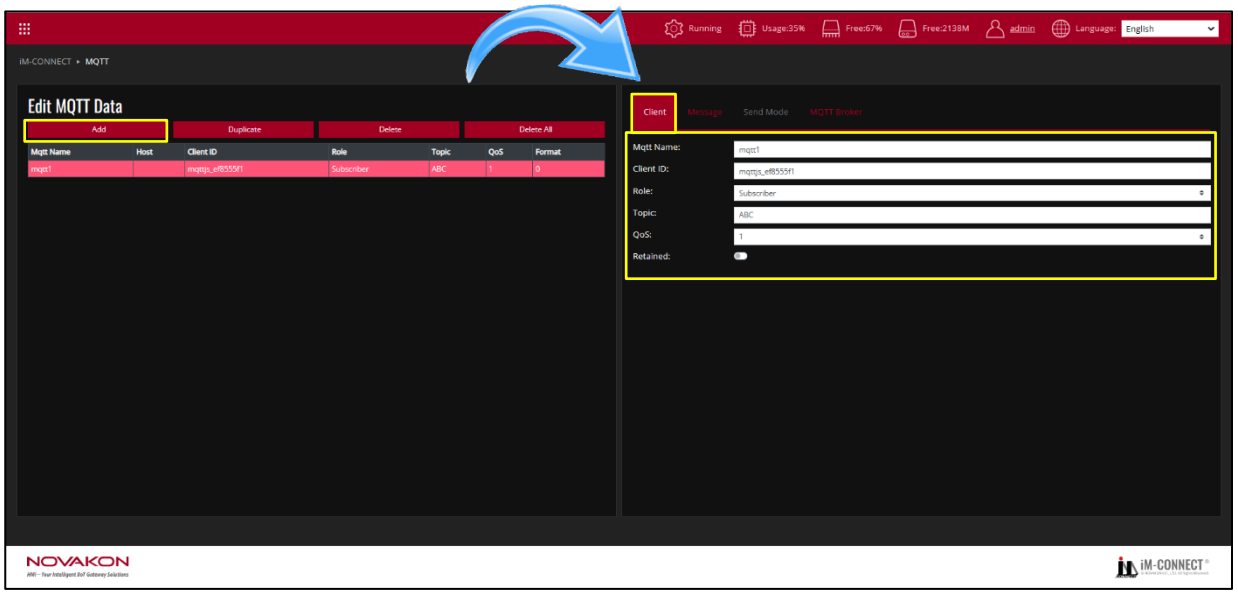
A. Click on the upper left to open the menu, click 【Tag Setting】 to enter the setting.
Add three new tags with the data types of Bit/INT(16)/UINT(32).
Both GW-01 must create these tags separately.
For instructions on tag setting, please refer to 【4. Tag Setting】 in this manual.

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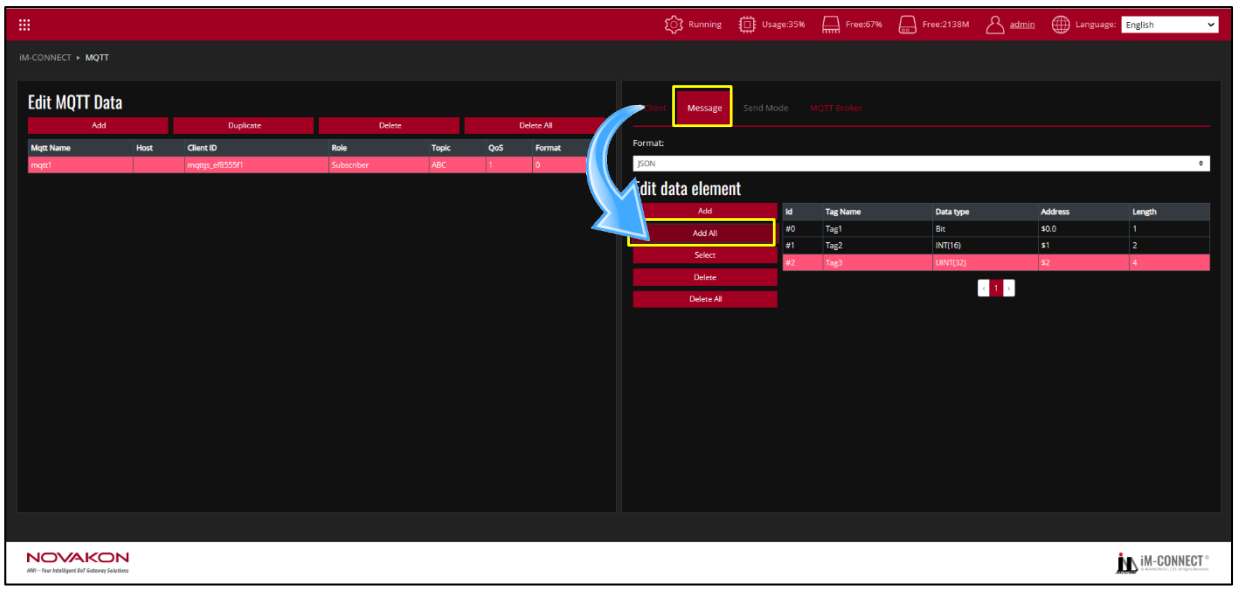
B. MQTT Subscriber setting (the IP of GW01 is 192.168.90.129)

- Click on the upper left to open the menu and click 【MQTT】 to enter the settings.
- Click 【Add】 and go to 【Client】 to set the role to 【Subscriber】, and the topic must be consistent with the Publisher setting. In this example, set it to 【ABC】.

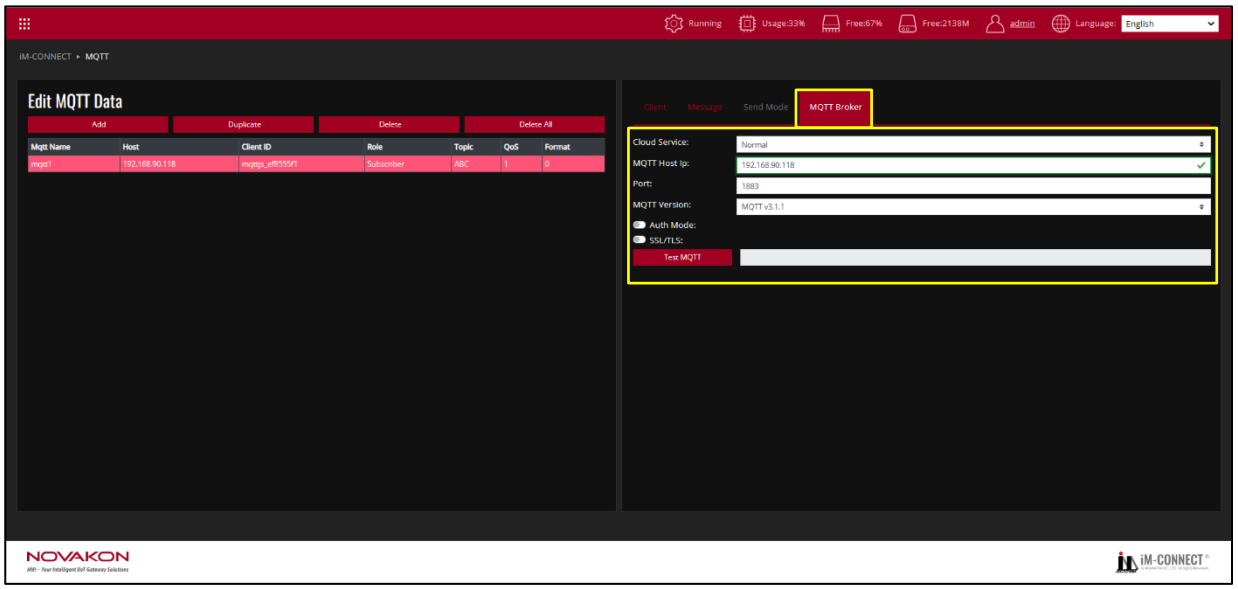


- Click 【Message】 and press 【Add All】 to add all the three tags created.

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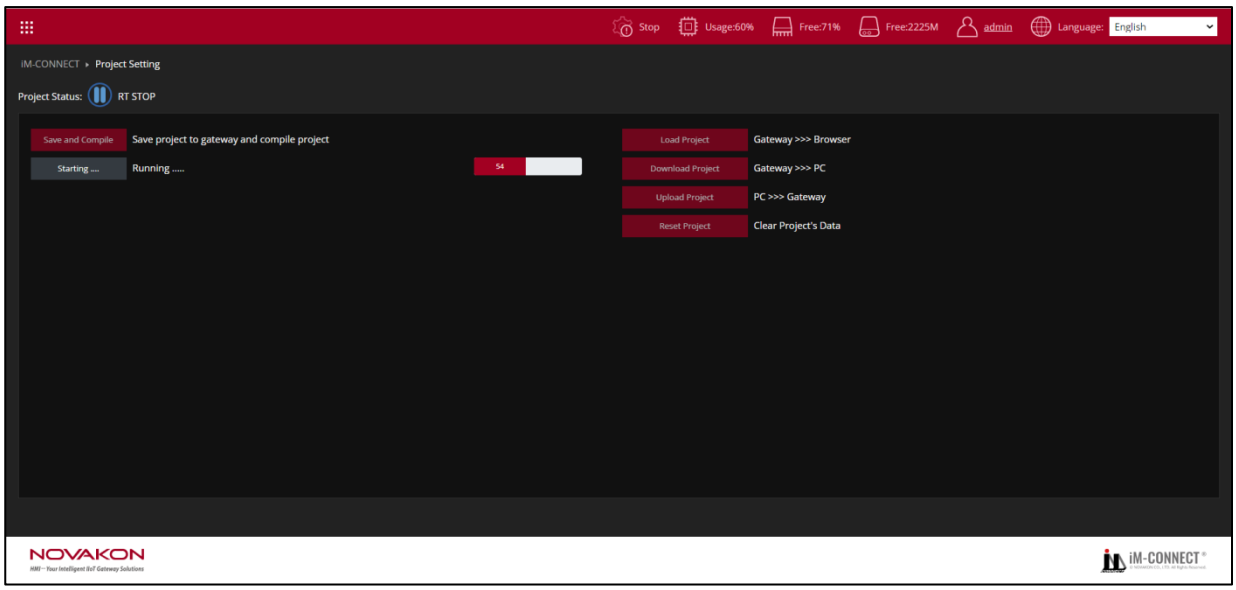


- Click 【MQTT Broker】 and set 【Cloud Service】 (this example is set to 【Normal】) / 【MQTT Host ip】 (in this example the command is sent by the Publisher, so Host ip must be set to the IP address of the Publisher 【192.168.90.118 】) / 【Port】(in this example, the default is 【1883】).



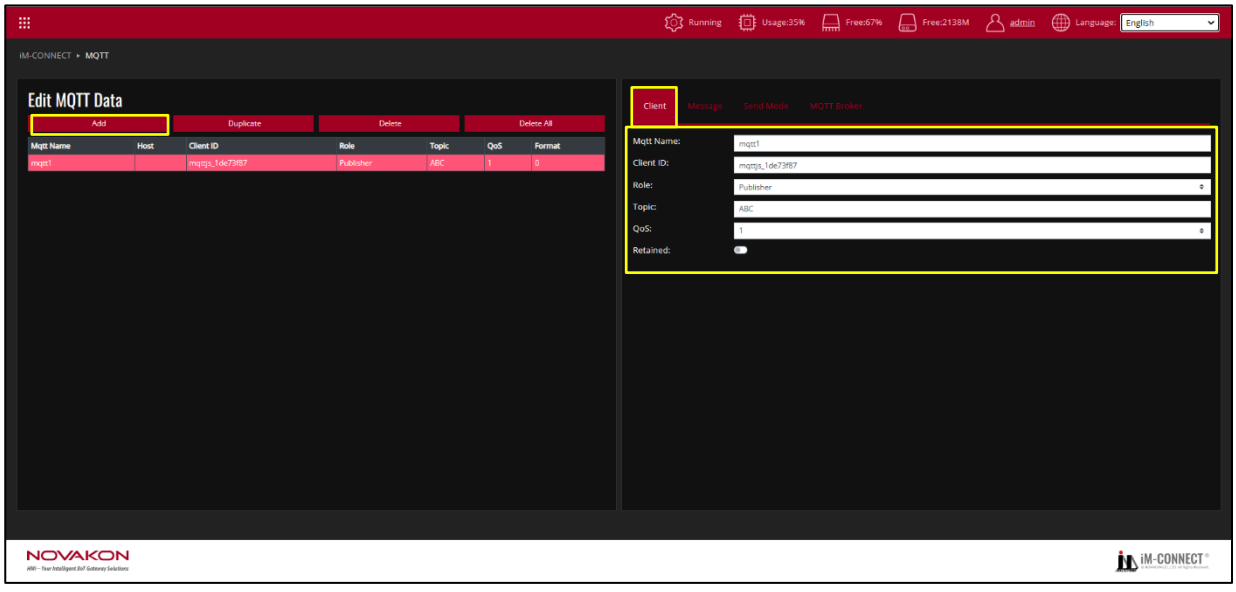
- After the setting is completed, you can go to【Project Setting】to execute【Save and Compile】 to GW01 and then 【Start Project】.

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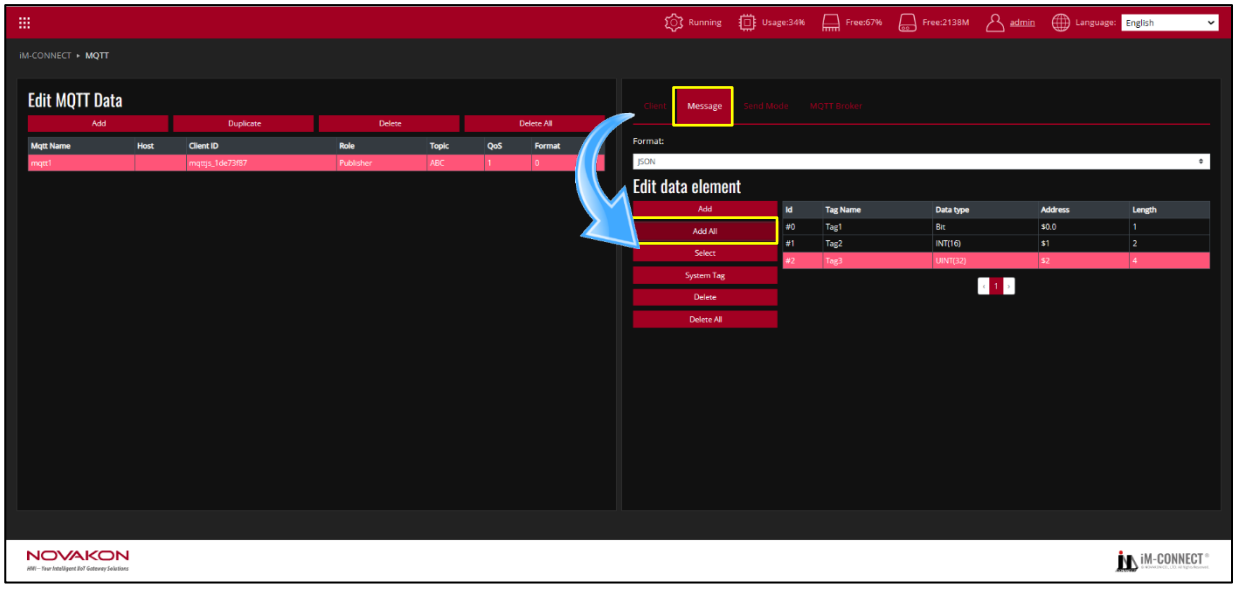
C. MQTT Publisher settings (the ip of GW01 is 192.168.90.118)

- Click on the upper left to open the menu, and click 【MQTT】 to enter the settings.
- 【Client】 set the role to 【Publisher】, and the topic should be consistent with the Subscriber setting. In this example, it is set to 【ABC】

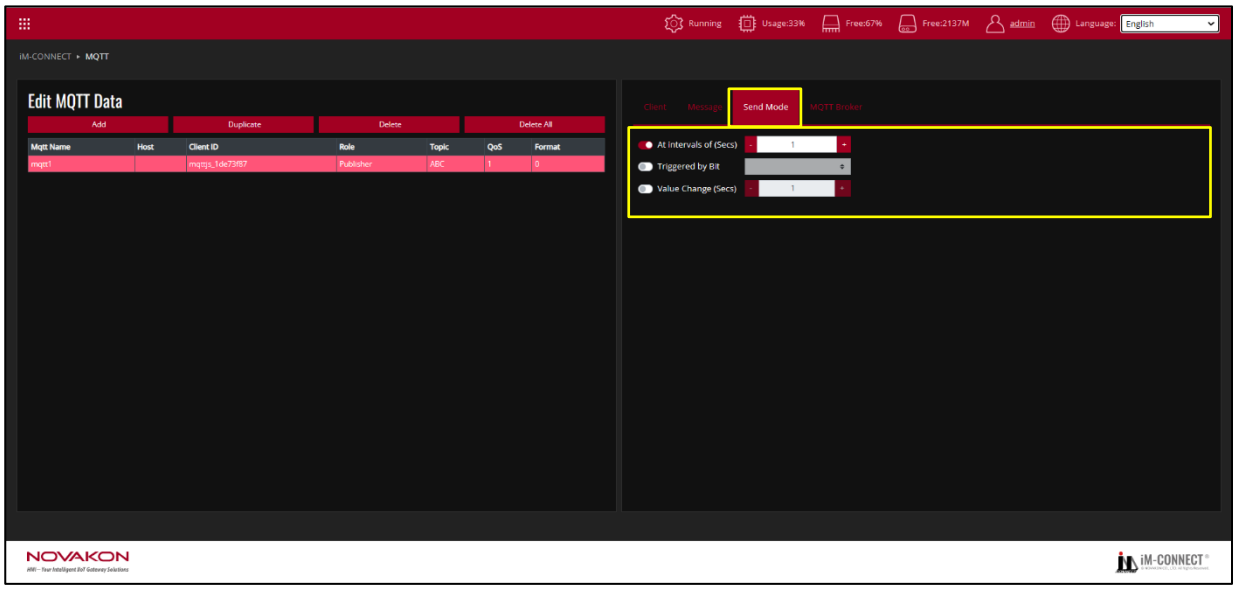


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- Click 【Message】 and press 【Add All】 to add all the three tags created.

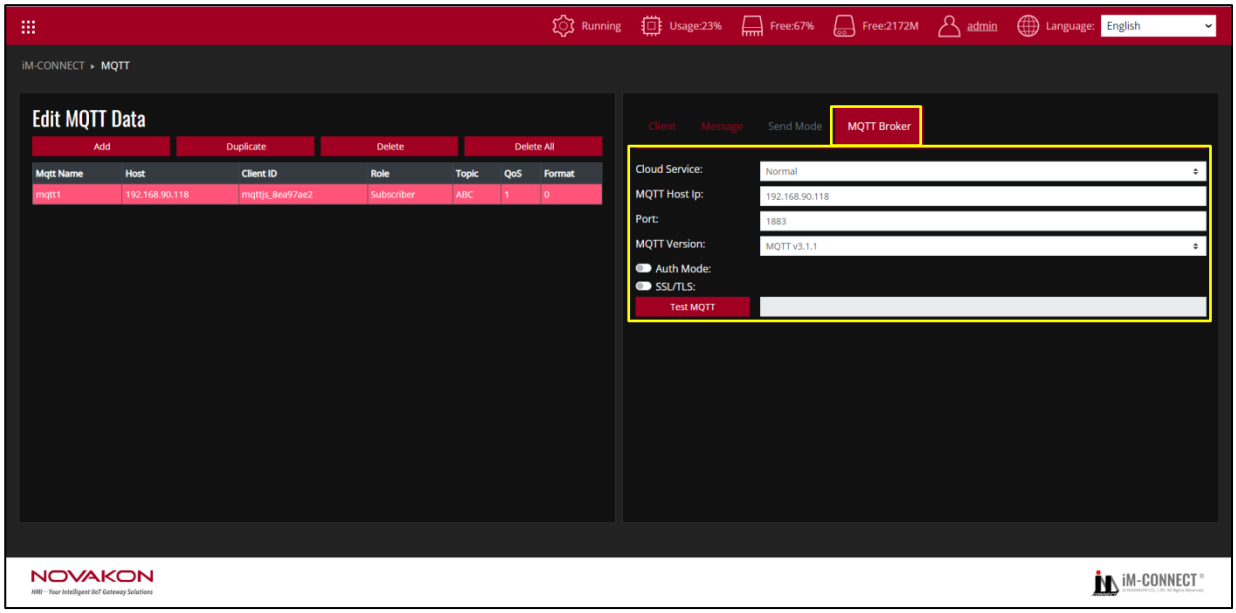


- Click 【Send Mode】, and set the conditions for transmitting data according to actual needs (in this example, set 【At intervals of (Secs)】 to transmit once per second).

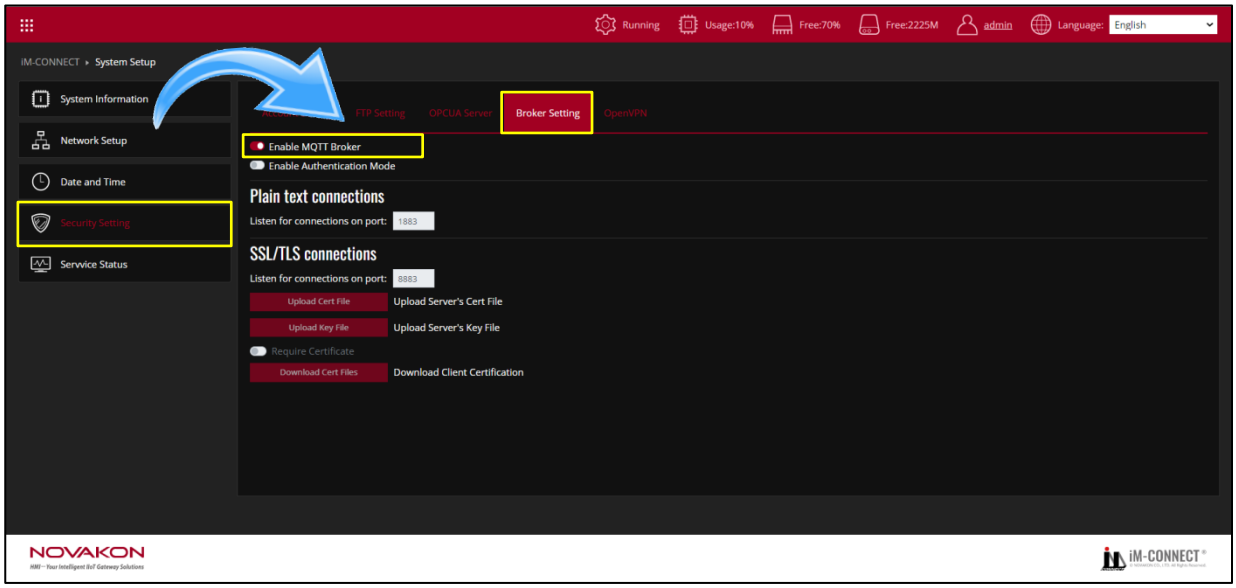


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- Click 【MQTT Broker】 and set 【Cloud Service】 (this example is set to 【Normal】) / 【MQTT Host Ip】 (because this gateway is the Publisher, so enter the IP of this gateway 【192.168.90.118】 here) / 【Port】(in this example, the default is 【1883】).

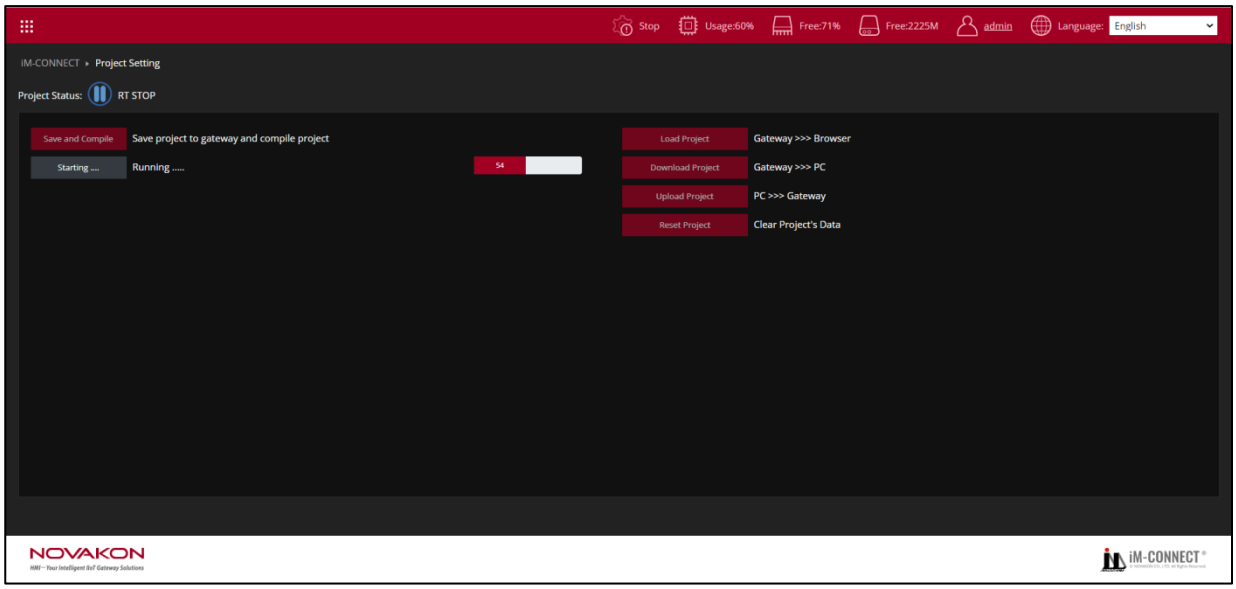


- Click on the upper left  to open the menu, and click 【System Setup】 to enter the settings.
- Click 【Security Setting】 → 【Broker Setting】. Press 【Enable MQTT Broker】 and specify it as MQTT Broker.



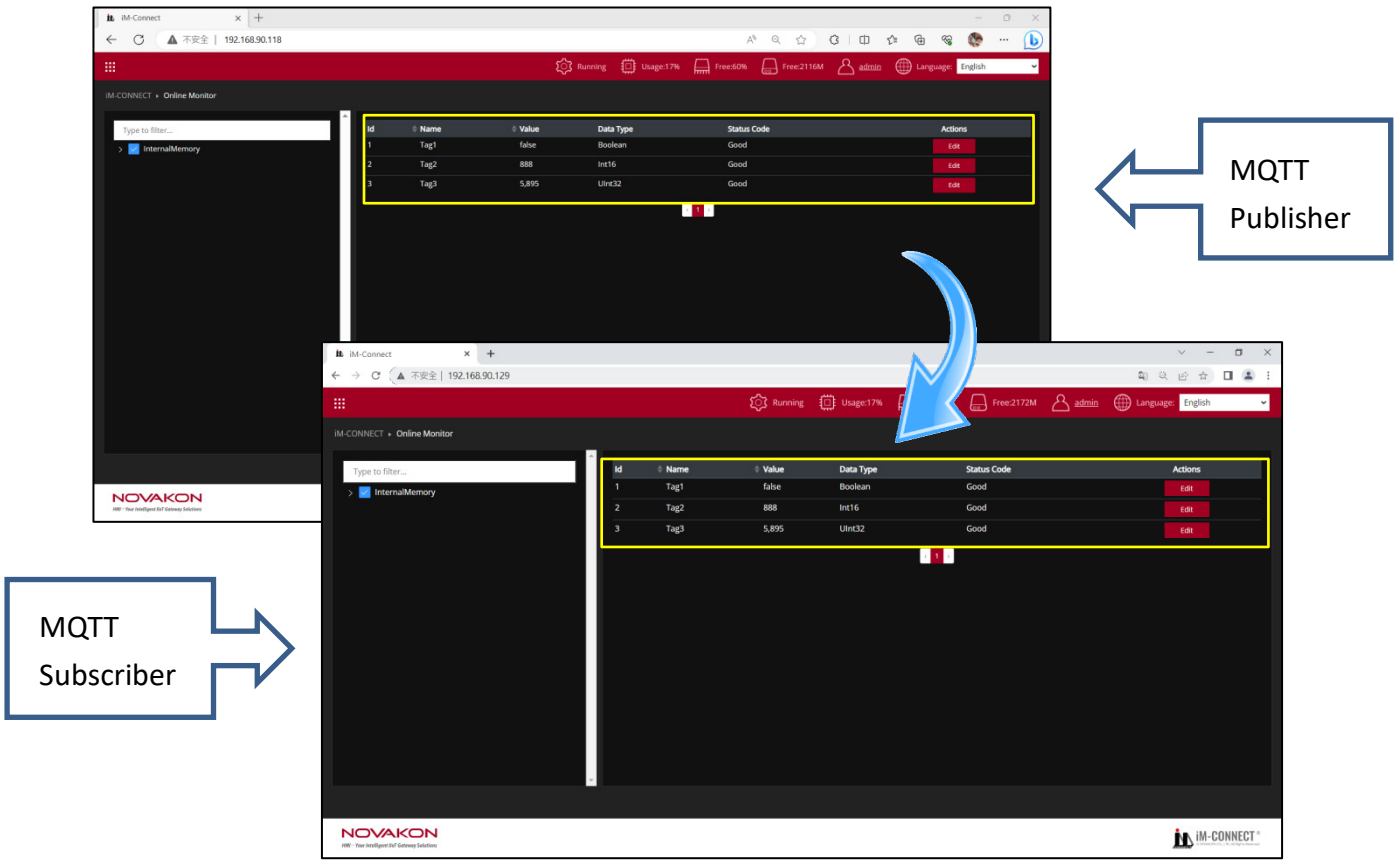
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- After the setting is completed, you can go to【Project Setting】to execute【Save and Compile】 to GW01 and 【Start Project】



D. Connection Test

- Connect two GW01 respectively, click on the upper left ⋮⋮⋮ to open the menu, and click 【Online Monitor】 to enter the monitoring screen.
- It can be seen from the webpage that when the Publisher modifies the tag value, it will be sent to the Subscriber after one second, which means that the connection through MQTT has been successful.

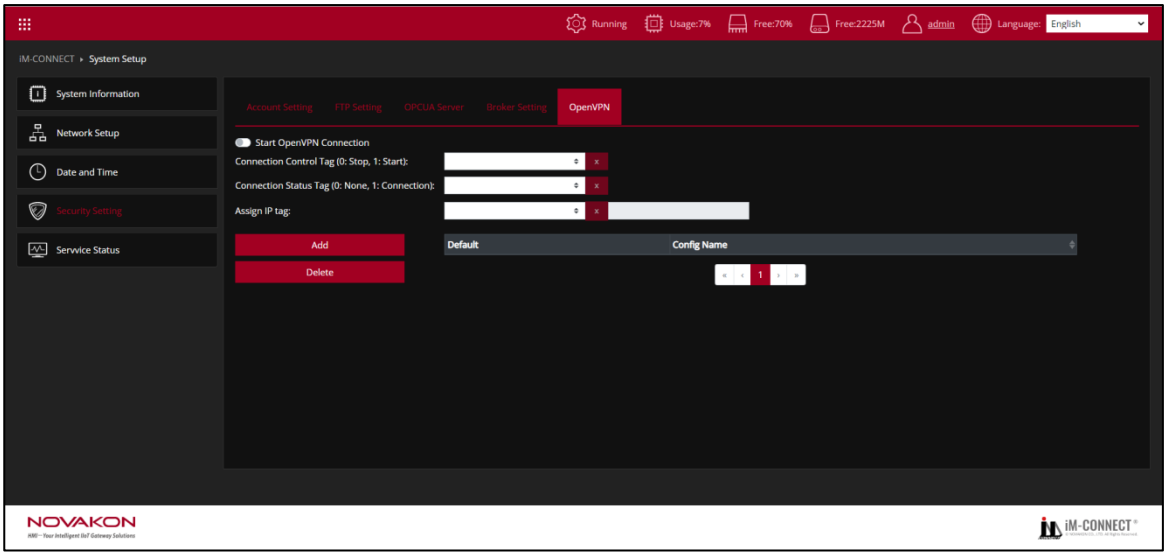


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Remark：

- The MQTT server host URL of 【Subscriber】 should be consistent with 【Publisher】, so that the data can be sent from 【Publisher】to 【Subscriber】 smoothly.
- The MQTT Broker used in this example is built inside the same GW01 as the 【Publisher】, so you should go to 【System Setup】 → 【Security Setting】 → 【Broker Setting】, and press 【Enable MQTT Broker】, to specify it as an MQTT Broker.
- After the setting is complete, you can enter the 【MQTT Broker】 tab and press 【Test MQTT】 to check whether it is correct.
- MQTT is a one-way data transmission method, that is, 【Publisher】 sends data to 【Subscriber】.

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【OpenVPN】：Set OpenVPN for remote control and monitoring

【Start OpenVPN Connection】：Enable to start OpenVPN connection.

【Connection Control Tag】: Assign a bit tag to trigger the OpenVPN connection. (e.g. false：disconnect；true：connect)

【Connection Status Tag】: Assign a bit tag to show the OpenVPN connection status. (false：disconnected；true：connected)

【Assign IP tag】: Assign a string tag to show the assigned IP address of the OpenVPN Client.

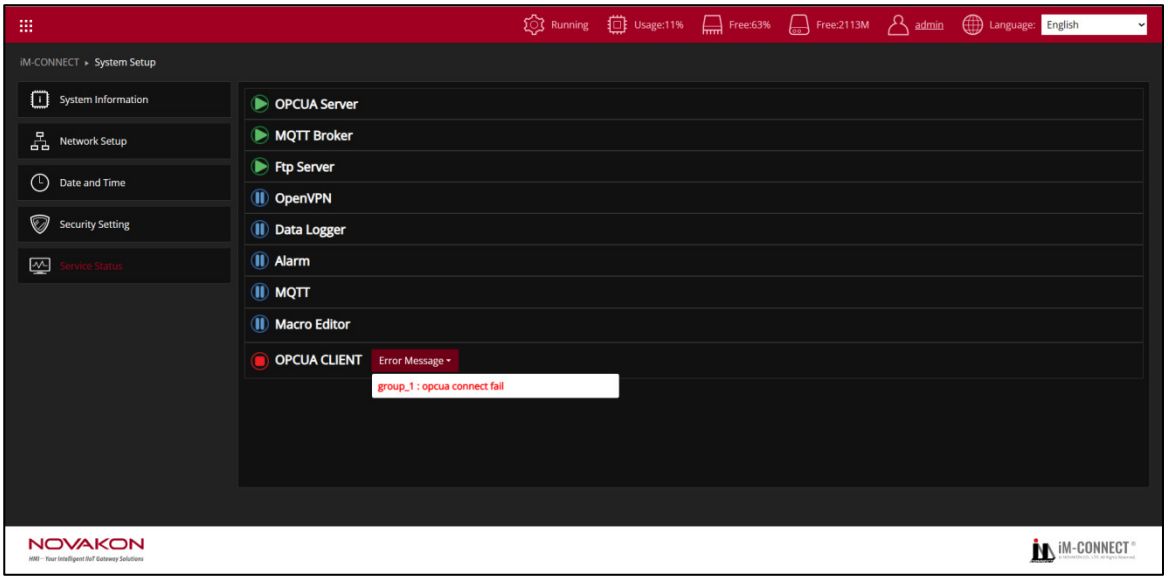
【Add】：Add a (*.ovpn) file. Click 【Add】to open the dialogue to select the (*.ovpn) file.

【Delete】：Delete the (*.ovpn) file is not needed.

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12.5 Service Status

Display current status of each services in the project.

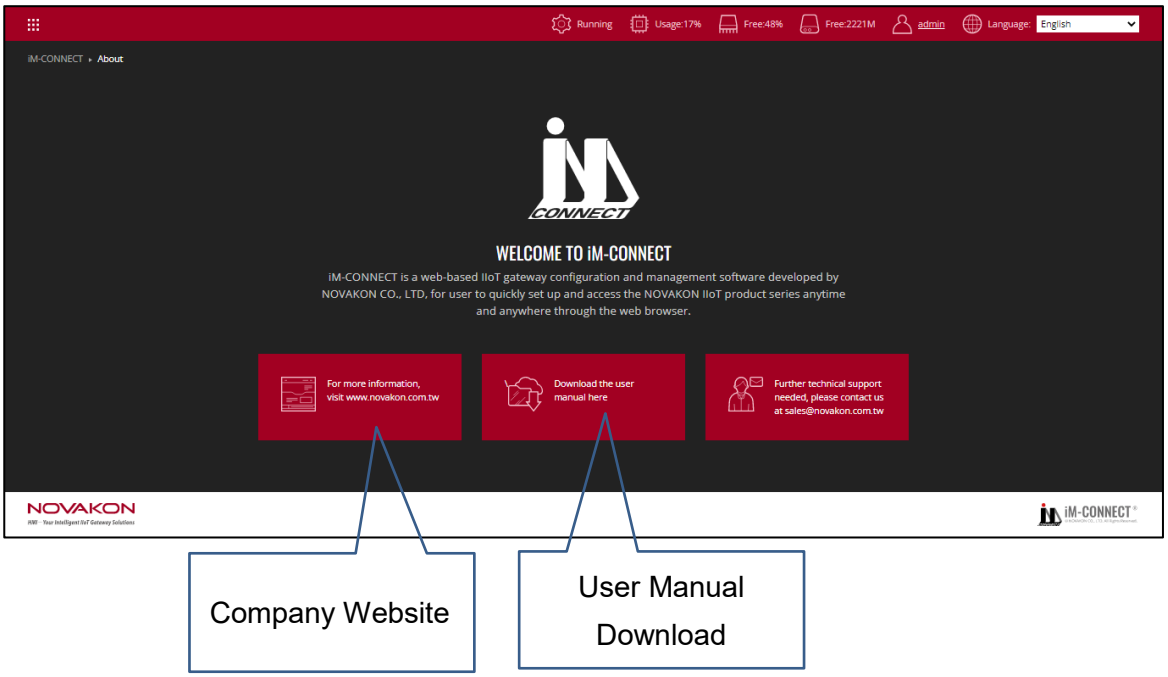


indicates the service is started; shows the service is stopped.
When there is an error in the service, will be displayed, and when the red 【Error Message】 button is pressed, a drop-down window will be displayed to show error-related messages.

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13. About

【About】displays company and product related information. Users can access to NOVAKON official website for resources, including download the user manual.

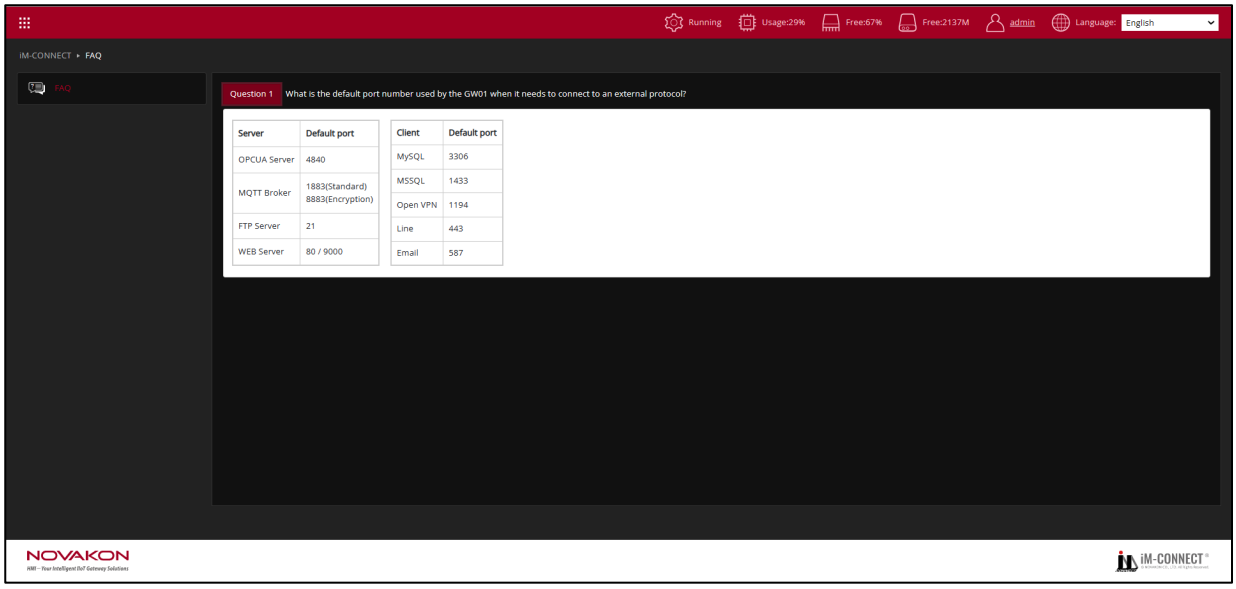


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14. FAQ

【FAQ】is mainly for Q&A related information inquiries.

The content of FAQ will be updated through the updated version from time to time, and the relevant content can also be queried on the NOVAKON official website.



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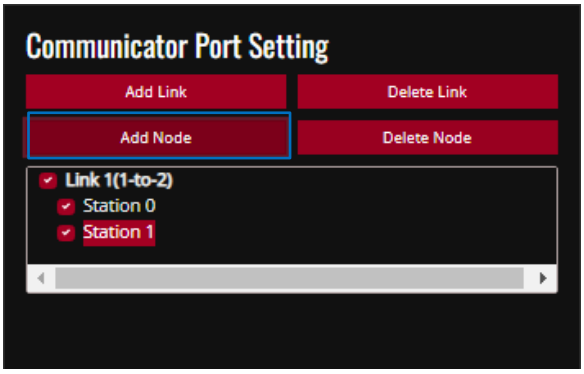
15. Connection Setup Example

15. 1 Add Station and Link

15. 1. 1 **Add Station**

If same devices are using the same IP, press 【Add Note】 to add a Station; otherwise, press 【Delete Note】 to delete a Station.
Each Station can be assigned a different 【Station No】, which means it is already connected to other devices. Likewise, each tag can be assigned to a specified Station No.

A. Click Link 1 (1-to-1) and add 【Station 1】 by clicking 【Add Node】.



Edit the content of 【Station 1】, set 【Station No】 to 2, meaning pairing to Device Id： 2.
Repeat the same steps to increase the number of 【Station No】.

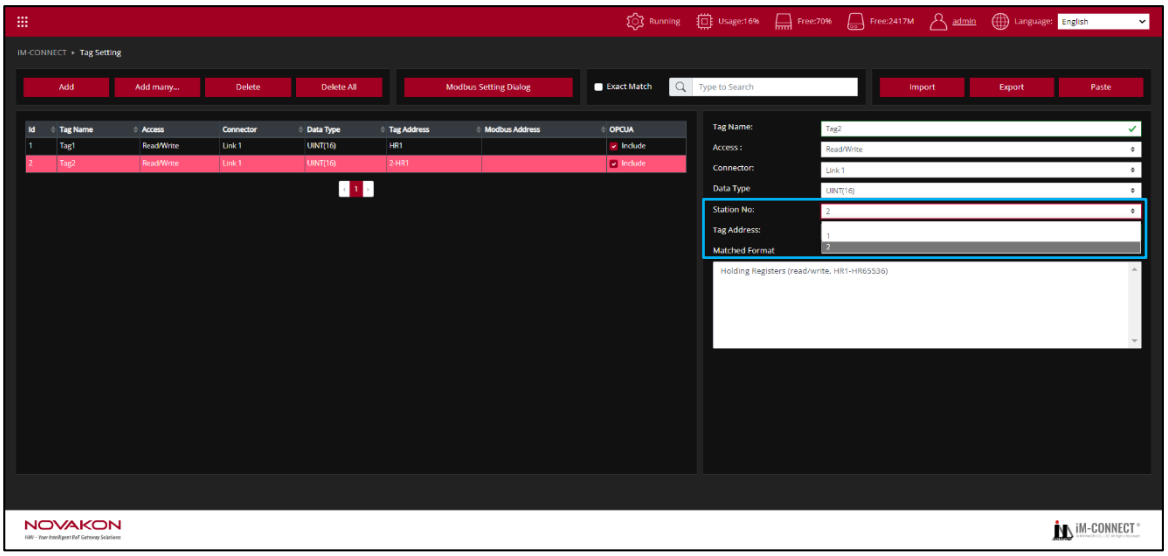


Edit the tag, open 【Tag Setting】, and press 【Add】 to add a new Tag. Add tags in sequence

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by following the same procedure shown above.

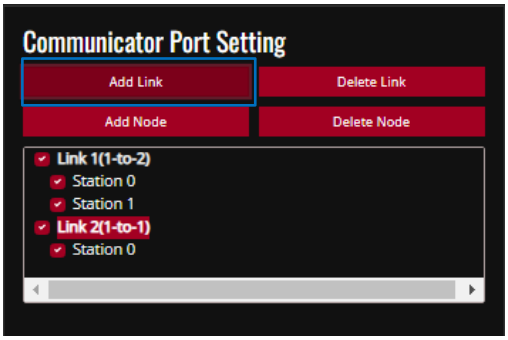
Specify the paring Device Id by selecting the corresponding 【Station No】 with the same number.



15. 1. 2 **Add LINK**

If a different IP (including the Port number) or COM Port is used, a LINK must be added to establish a different connection. The process is shown as follows：

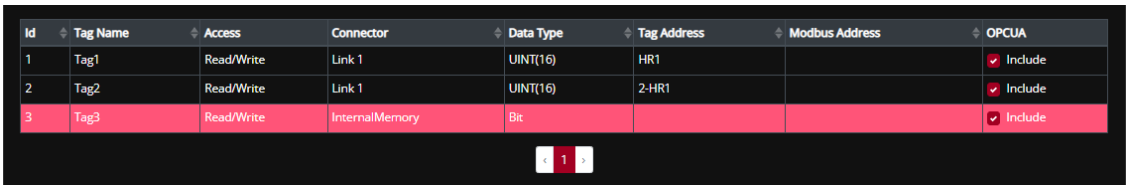
A. Go back to 【IM-CONNECT Menu】 and enter the 【PLC Setting】 page → click 【Add Link】 to add a new set of connections.



Please refer to the above section 【8.1】 for the method of choosing a PLC Driver.

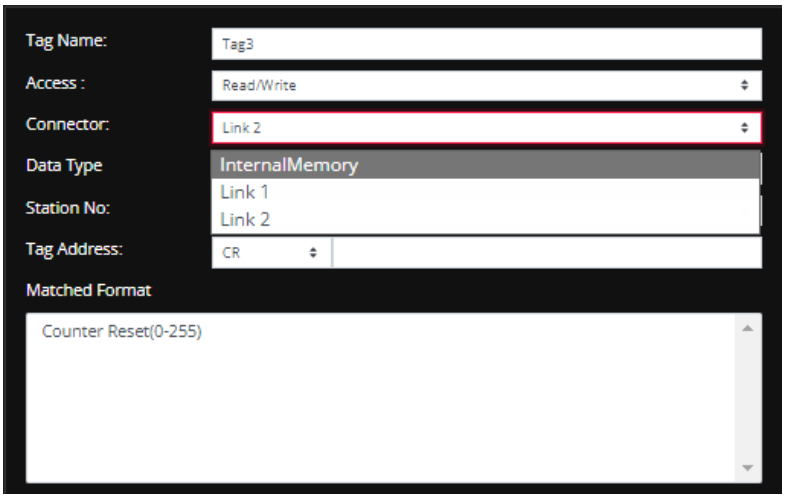
Follow the aforementioned process to add tags to be used in sequence.

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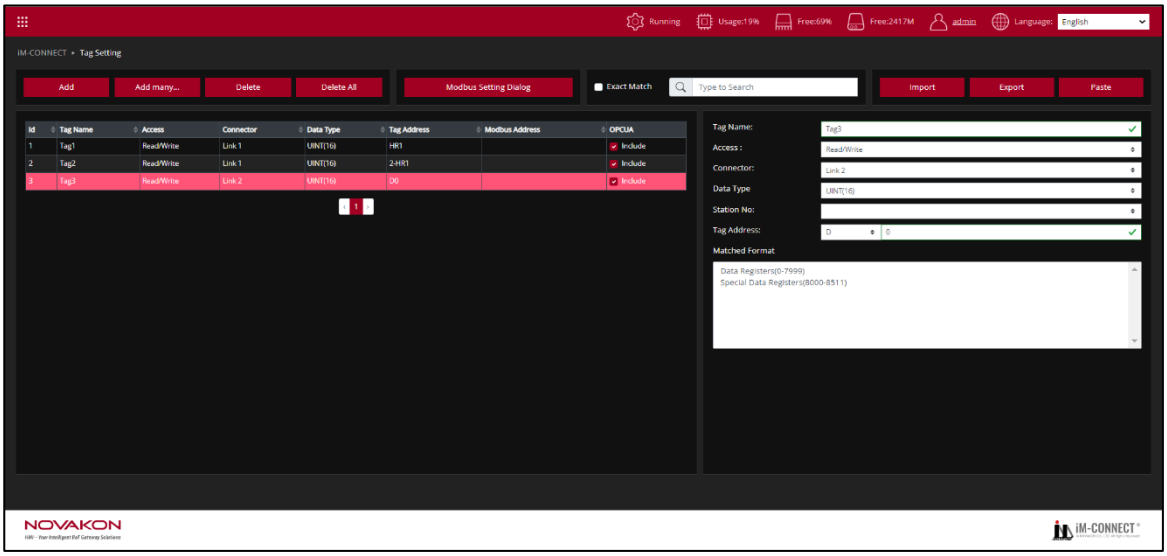


Id	Tag Name	Access	Connector	Data Type	Tag Address	Modbus Address	OPCUA
1	Tag1	Read/Write	Link 1	UINT(16)	HR1		Include
2	Tag2	Read/Write	Link 1	UINT(16)	2-HR1		Include
3	Tag3	Read/Write	InternalMemory	Bit			Include

Select Link2 in the drop-down list of 【Connector】.



The setting is complete. Tag3 is now changed as Link2.



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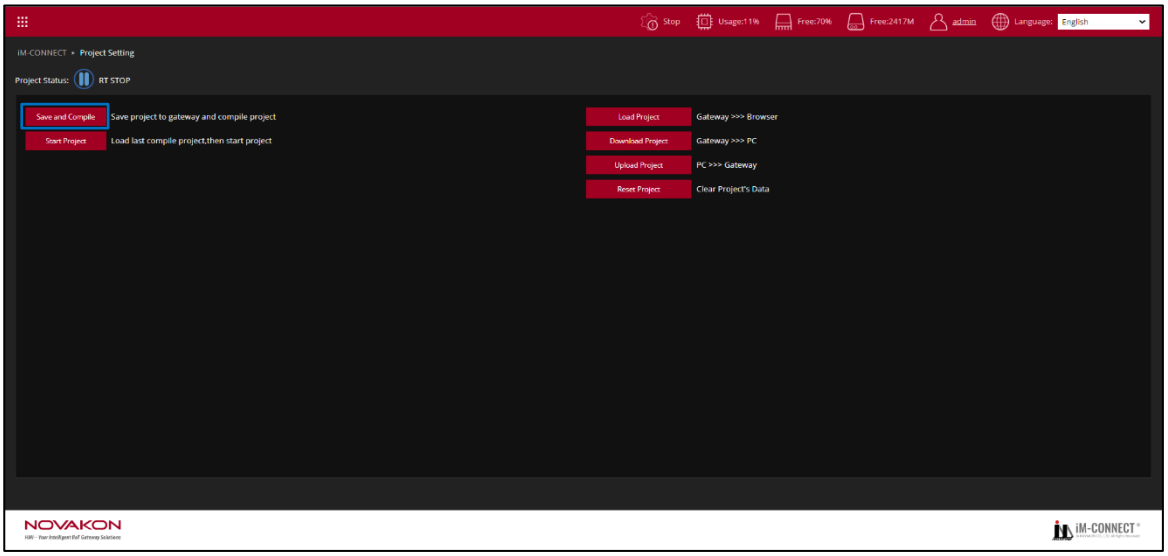
15.2 Compile PLC and Tag data, load and start service

After the tag is set, the project is ready to be uploaded to GATEWAY.

A. Go back to 【IM-CONNECT Menu】 and click 【Project Setting】.

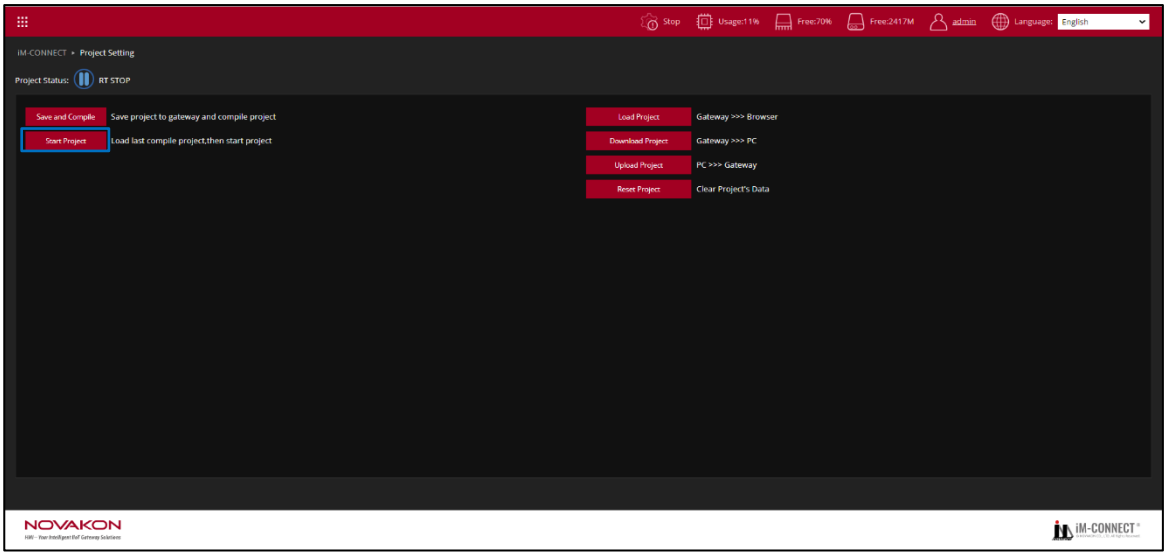


B. Enter 【Save and Compile】to save the previously set content to GATEWAY for compilation.



C. Click 【Start Project】 button to stop the current service, load the new successfully compiled data, and restart the Gateway.

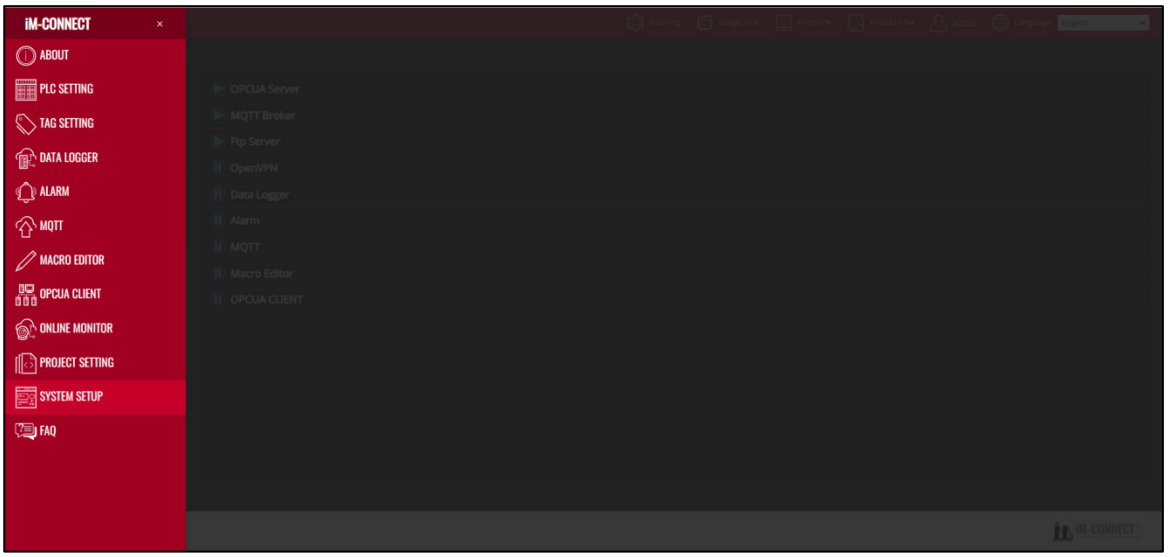
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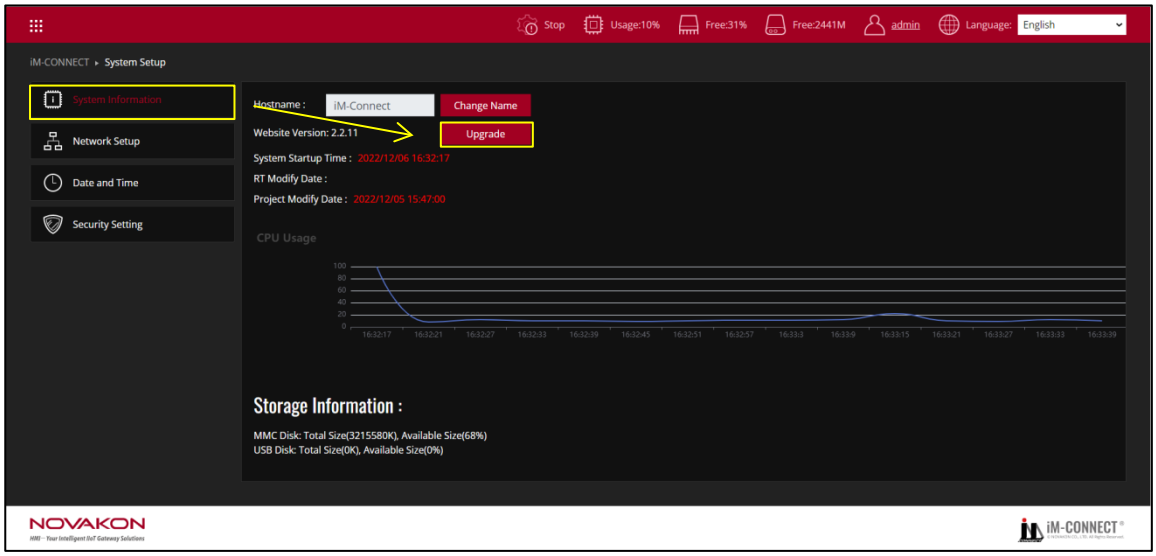
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16. Software Upgrade Guide

A. On iM-Connect webpage, click  to open system menu, click on “SYSTEM SETUP”.

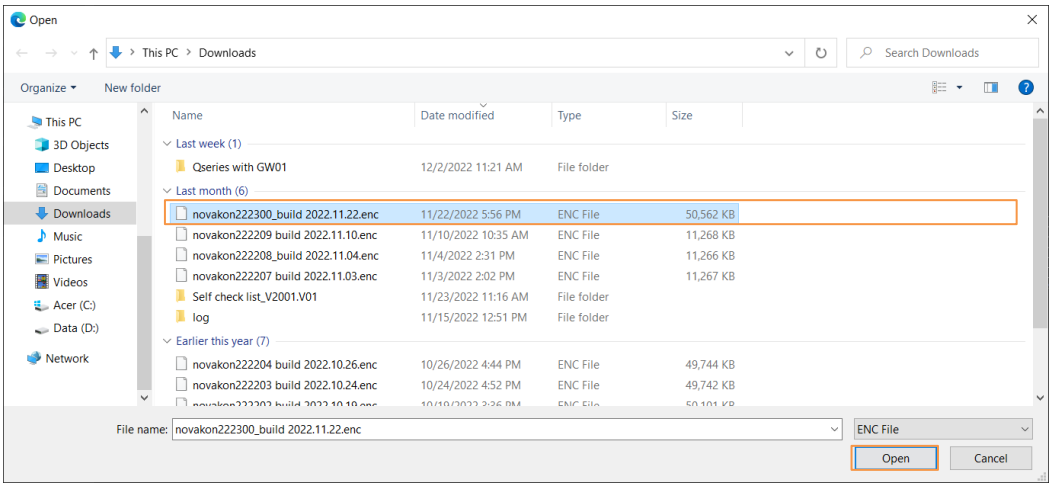


B. Click “System Information” (In this example, website version is 2.2.11), and click “Upgrade”

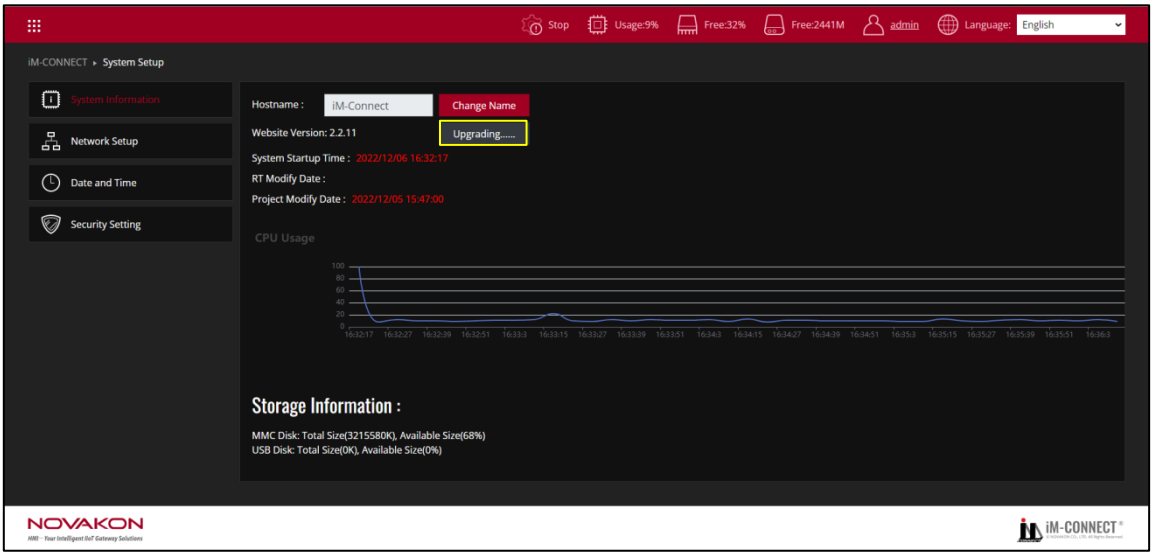


C. Locate the folder where the upgrade firmware(*.enc) was saved and click “Open”.

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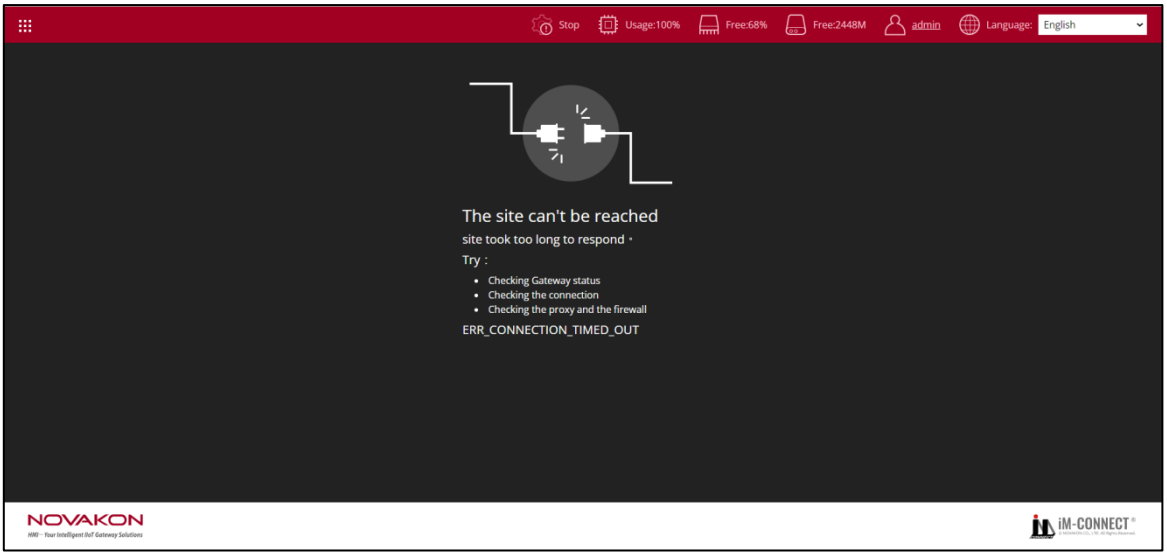


D. You will see “Upgrading……”during the process

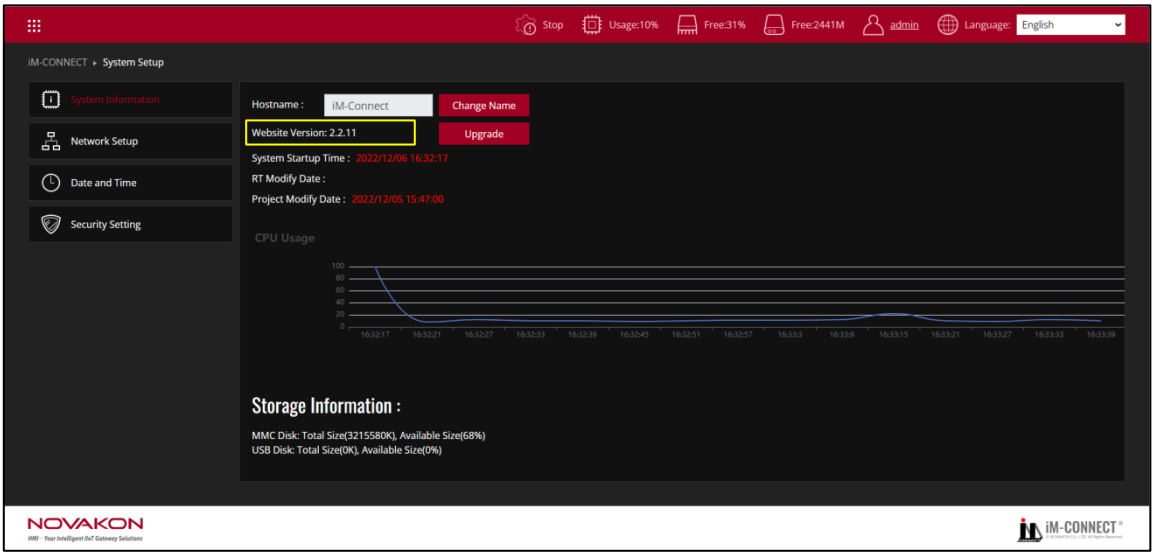


E. When the upgrade is complete, system will reboot, during which the webpage will show “The site can’t be reached”.

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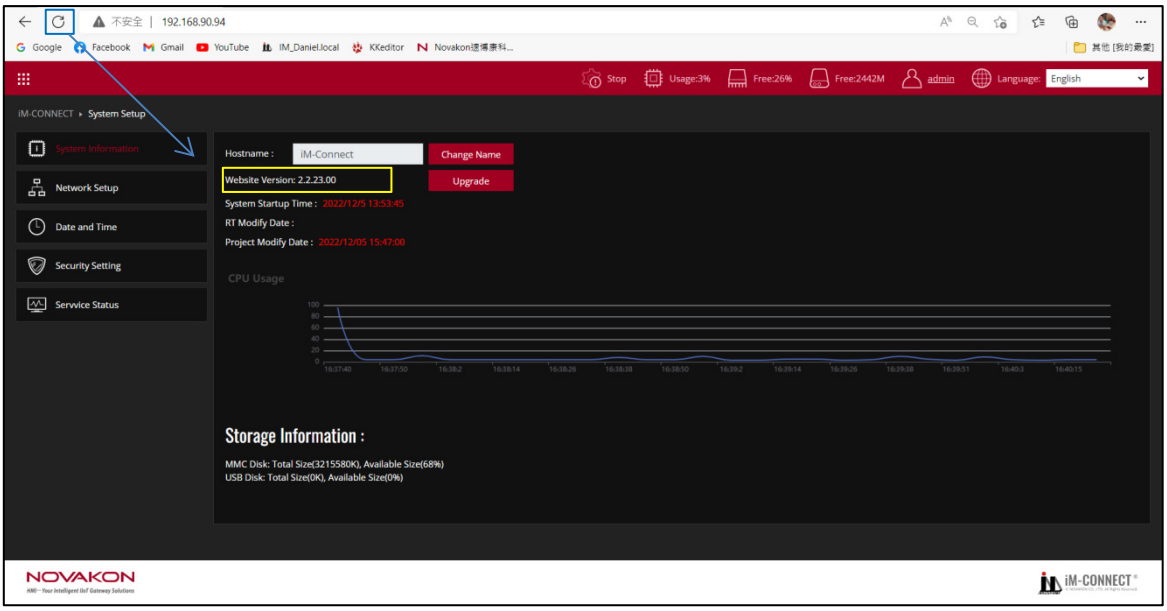


F. Wait until the webpage is reconnected. Now the system has been upgraded but still shows previous website version.



G. Click ↻ to refresh the webpage. Now the latest website version is re

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