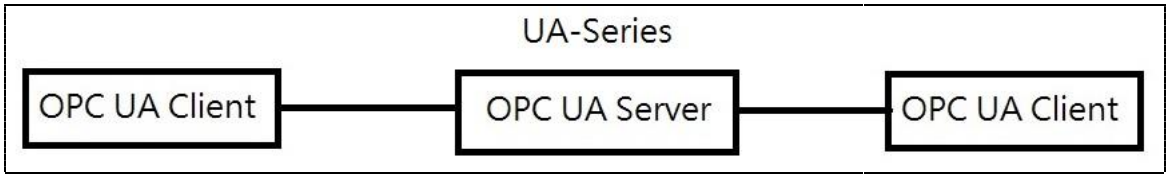
FAQ-CNV-07: UA Web UI Function Wizard – Module Communication Conversion - Internal / OPC UA - Data Exchange for OPC UA Client to Client via UA Series

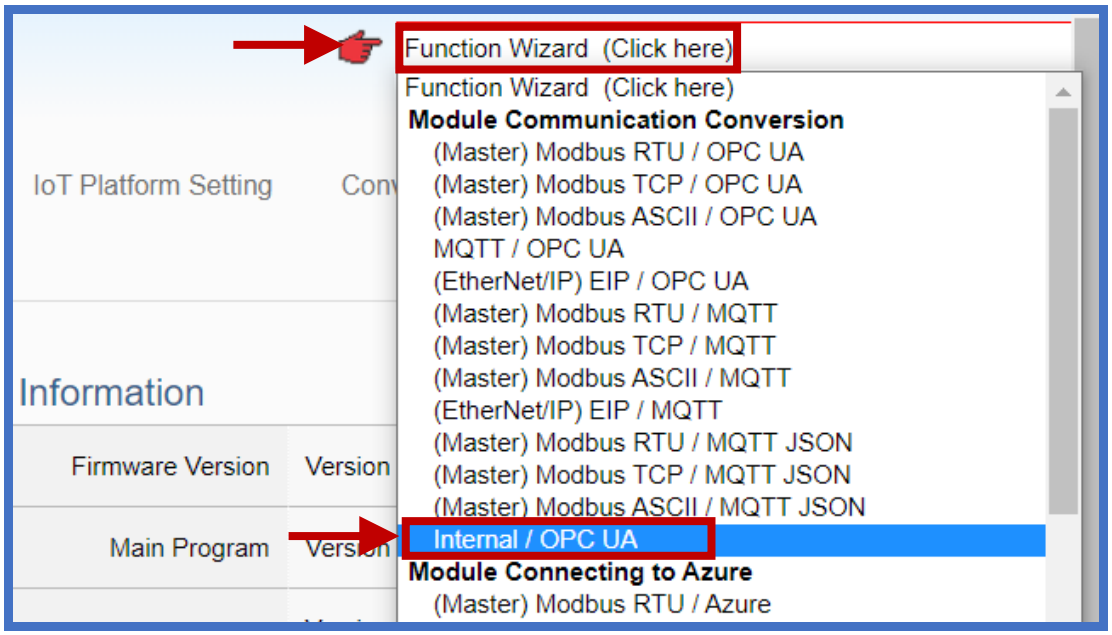
Using the OPC UA Service function to convert Internal to OPC UA (Server) protocol, or as an intermediary to provide data exchange for OPC UA Client to Client.



* Internal Variable: max. 8 internal modules; max. 100 internal variables (tags) per module.
* Protocol Communication Conversion: provide Internal to OPC UA Server conversion.

1. Project Setting Method

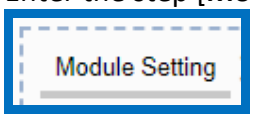
Enter the UA series product webpage, click **[Internal / OPC UA]** in the **[Function Wizard]** menu at the top right of the screen.



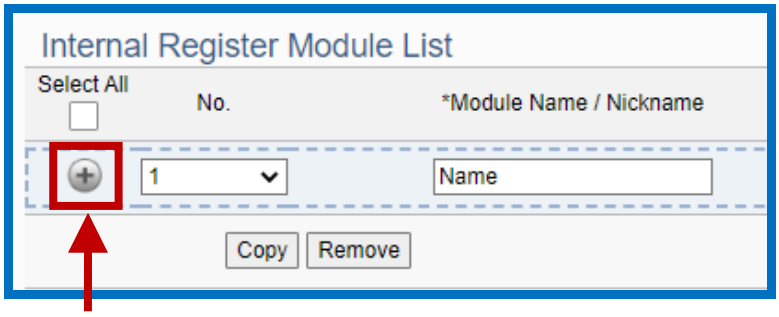
After clicking [Internal / OPC UA], follow the process steps.

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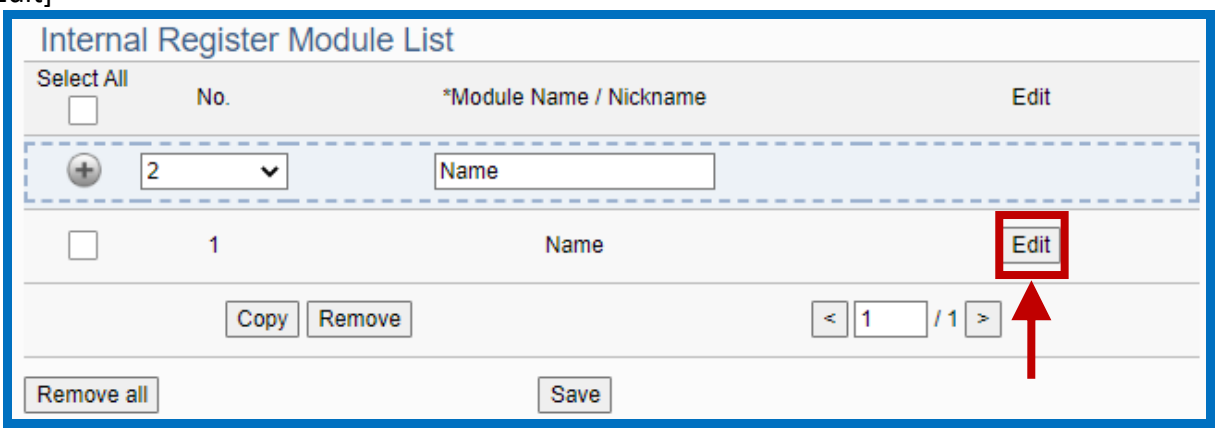
(a) Enter the step [**Module Setting**]



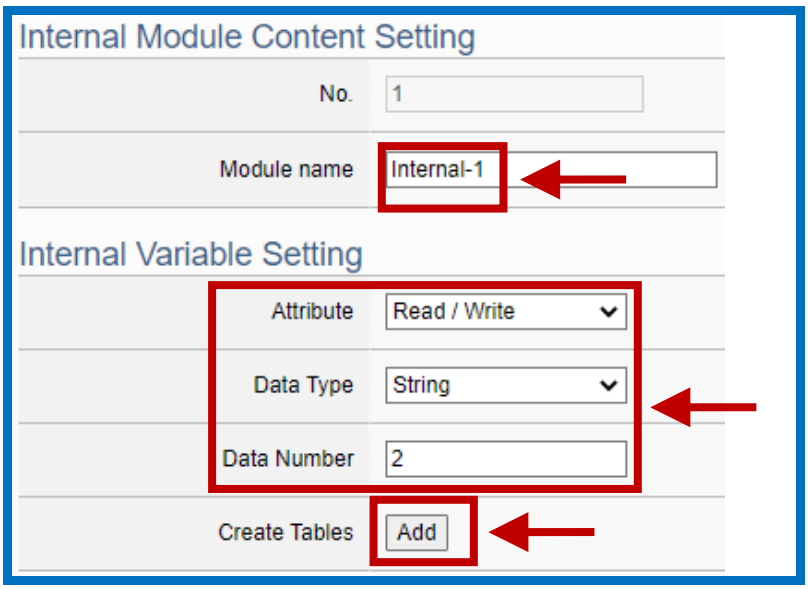
Click the "+" button, add an Internal module.



Click [Edit]

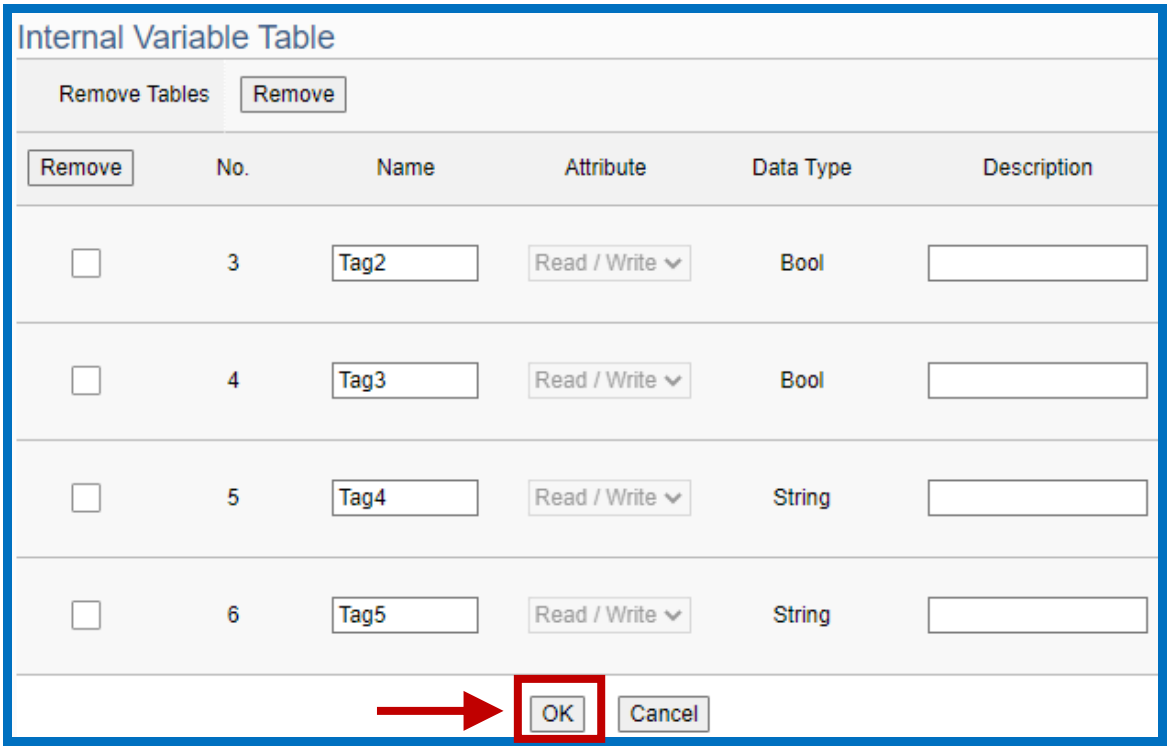


Enter the Module name and the content of the Internal Variable Setting, and then click [Add].

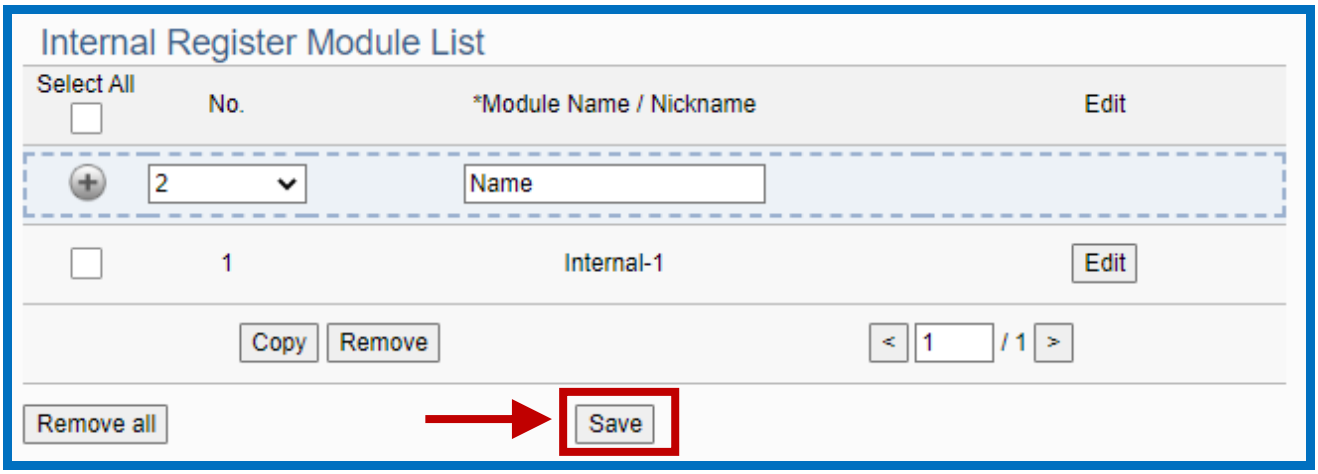


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Set the Internal Variables by user case, and then click [OK].

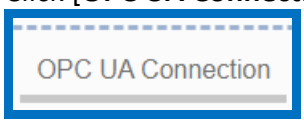


Click [Save].

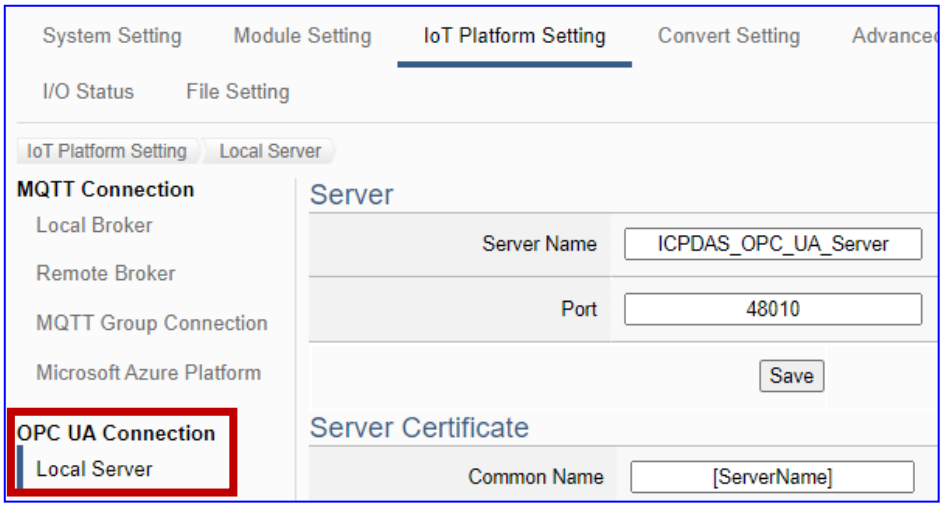


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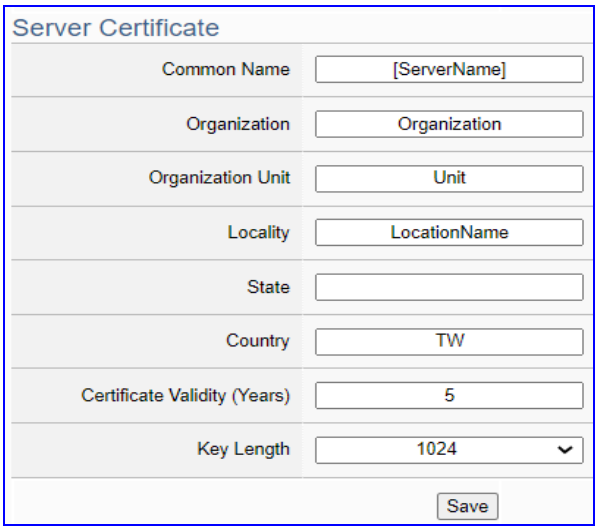
(b) Click [**OPC UA Connection**]



Adjust the default value of Local Server for OPC UA Connection according to your needs.

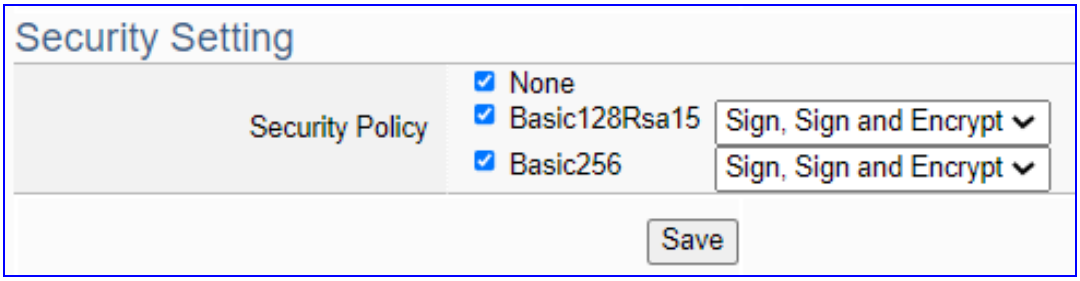


OPC UA Connection > Local Server – Server	
Server Name	Display the active OPC UA Server name. Not editable. System values: ICPDAS_OPC_UA_Server
Port	The communication port number of the OPC UA Server. System Default: 48010.
Save	Click to save the settings of this item.

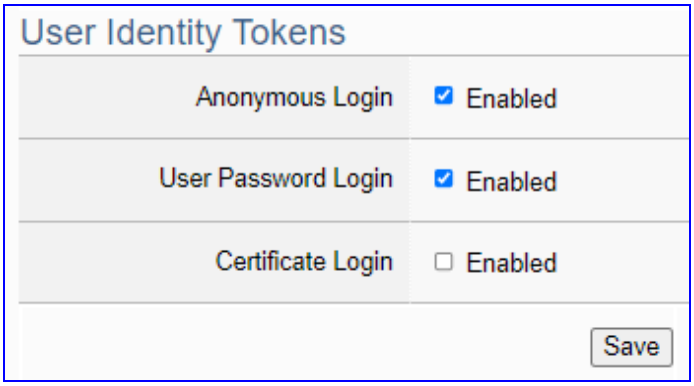


OPC UA Connection > Local Server – Server Certificate	
Common Name	Set the content of the self-signed certificate automatically generated by the OPC UA Server
Organization	
Organization Unit	
Locality	
State	
Country	
Certificate Validity (Years)	Set the validity period of the certificate (unit year)
Key Length	Set the length of Key
Save	Click to save the settings of this item.

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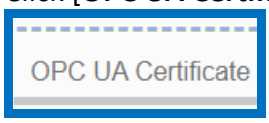
OPC UA Connection > Local Server – Security Setting	
Security Policy	Set the message security mode that the OPC UA Server opens to the Client. 3 Policy: None, Basic128Rsa15, Basic256
None	This policy do not use any security policy.
Basic128Rsa15	This policy has 3 selections: Sign: Message Signing Sign and Encrypt: Message Signing and Encryption Sign; Sign and Encrypt: Message Signing; Message Signing and Encryption
Basic256	This policy has 3 selections: Sign: Message Signing Sign and Encrypt: Message Signing and Encryption Sign; Sign and Encrypt: Message Signing; Message Signing and Encryption
Save	Click to save the settings of this item.



OPC UA Connection > Local Server – User Identity Tokens	
Anonymous Login	Check to enable the anonymous login of clients. Default: check.
User Password Login	Check to enable the user password login of clients. Default: uncheck.
Certificate Login	Check to enable the certificate login of clients. Default: uncheck.
Save	Click to save the settings of this item.

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(c) Click [**OPC UA Certificate**] (The user can skip this step if the project needs not certificate encryption.)

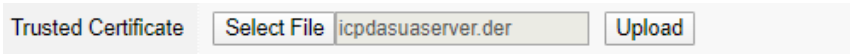
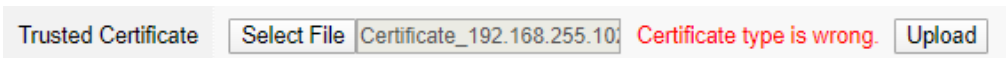
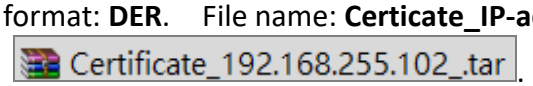
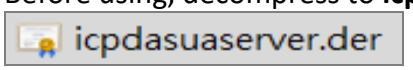


This function is the certificate file management function of OPC UA Server, steps as following.
In the [OPC UA Certificate] step, users can add credentials on both side's devices to strengthen security encryption:

I. Obtain the OPC UA Client trust certificate file of the device from the connected party, save it to the PC. In this step, select this file and upload it to the UA controller.
II. The device of the other side needs the UA certificate also. In this step, download the OPC UA Server certificate file (Certicate_IPAddress_.tar) to the other party, so that they can decompress the file (icpdasuaserver.der) and upload to their device.

The setting of [OPC UA certificate] is mainly for the communication security encryption of the OPC UA server. The setting parameters are as follows.



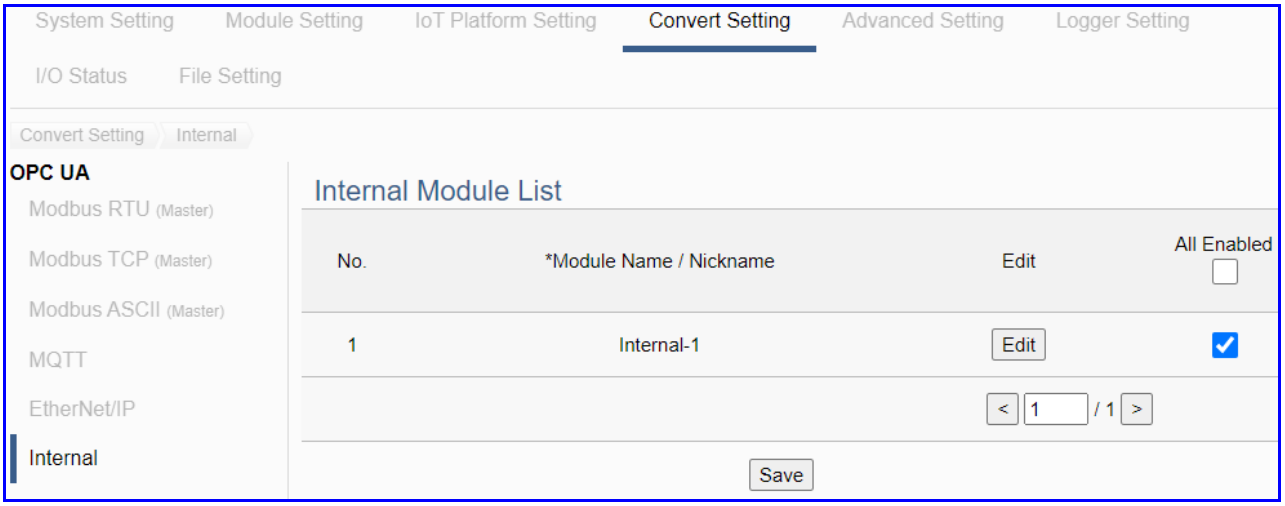
File Setting > OPC UA Certificate > Upload the file to the controller	
Trusted Certificate	**Select File**: select the OPC UA Trusted Certificate file in PC to upload to the UA controller. **Upload**: upload the Trusted Certificate file to the UA controller. • File format must be **DER**. Extension name must be "**der / cer / crt**".  • If select a wrong file, the system will show an error message. 
File Setting > OPC UA Certificate > Download the file from controller	
OPC UA Server Certificate	**Download**: Download the OPC UA Server Certificate file to the current using computer. • File format: **DER**. File name: **Certicate_IP-address_.tar** e.g. . Before using, decompress to **icpdasuaserver.der**, as below. 

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(d) Click [**Enable Converting Module**]



The internal module preset in the [Module Setting] will show up in the Module List.

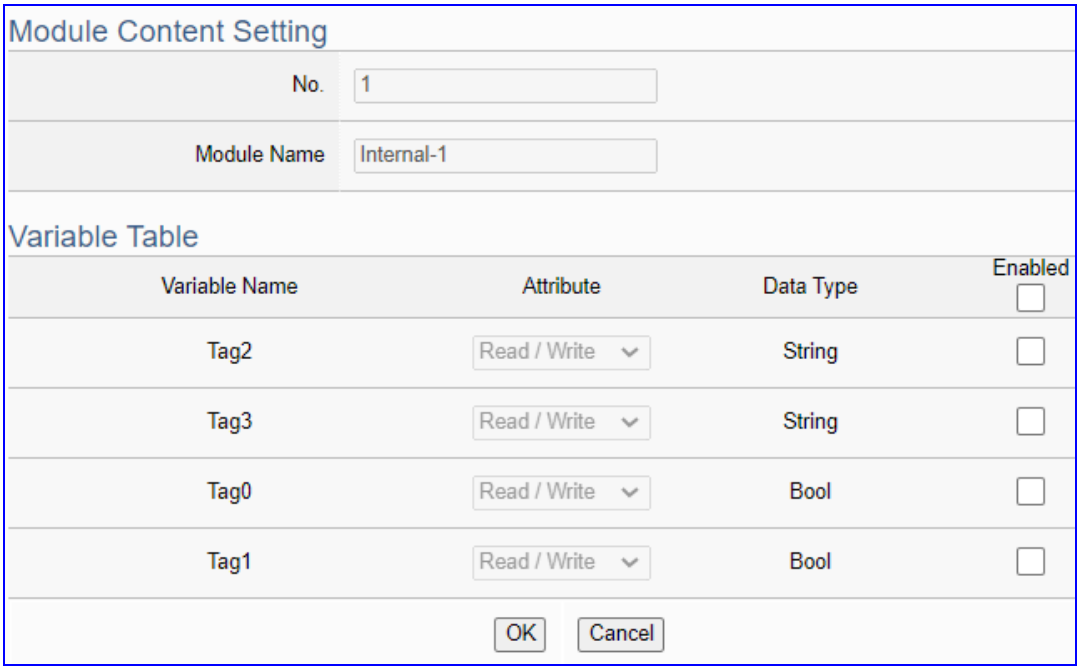


Convert Setting > OPC UA > Internal - Internal Module List	
No.	The module number in the module list (Not editable here)
Module Name / Nickname	The module name set in the module list (Not editable here)
Edit	Click to enter the “Internal Client Setting” page to enable the I/O.
All Enabled Enable	Check [All Enabled] box to enable all modules in list for conversion. Default: Uncheck. Check the box of each module can enable just that module for conversion.
< 1 / 1 >	The page number of the module list: Current page / Total pages. Click < or > to go to the previous or next page.
Save	Click to save the settings of this page.

This function is to enable the communication conversion module, please check the box of the converting module. If user wants to enable some I/O of the module, please click [Edit] button to enter the “Module Content Setting” page.

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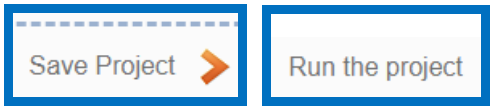
The [**Module Content Setting**] page can show the Variable Table and user can enable the variables Individually.



Convert Setting > OPC UA > Internal - Internal Module List > Module Content Setting	
No.	The module number in the module list (Not editable here)
Module Name	Give a name, e.g. model number or name. Default: Name.
Convert Setting > OPC UA > Internal - Internal Module List > Variable Table	
Variable Name	The Variable name in the module list (Not editable here)
Attribute	Display data attribute of the variable. (Not editable) Include: Read, Read/Write…
Data Type	Display data type of the Internal variable. Include: Bool, Short, Unsigned Short, Long, Unsigned Long, Float, Double, String. (Not editable here)
Enabled	Check [Enabled] box of the top row can enable all variables in list. Check the box of each variable can enable just that variable for conversion. Default: Uncheck.
OK / Cancer	Click [OK] to save and exit the page settings. Click [Cancer] to exit without saving.

Click [OK] to return to the module list screen, and click the save button to save the settings on this page.

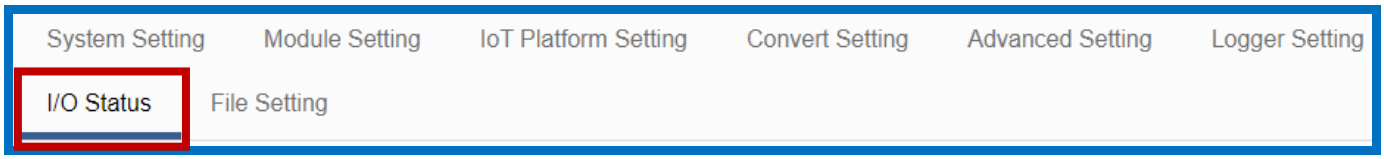
(e) Click [Save Project], and at last click [Run the project].



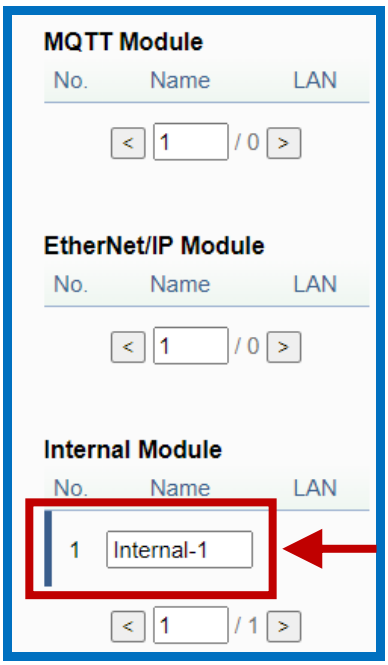
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2. Check OPC UA Server real-time information

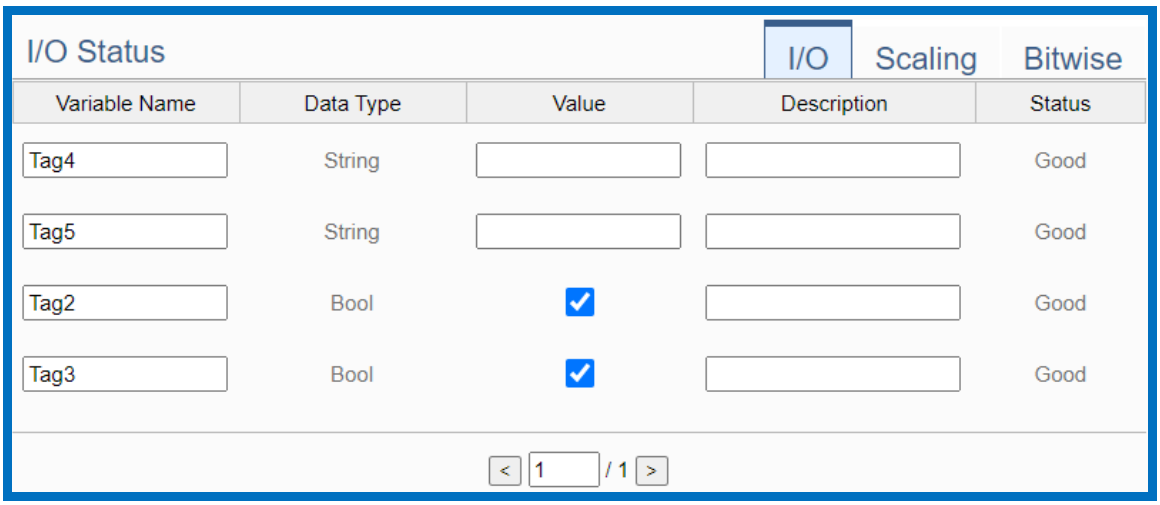
Click the UI menu [**I/O Status**]



Check the [Internal module] on the left and click the number you want to confirm



The right side will display the current OPC UA Server status.



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