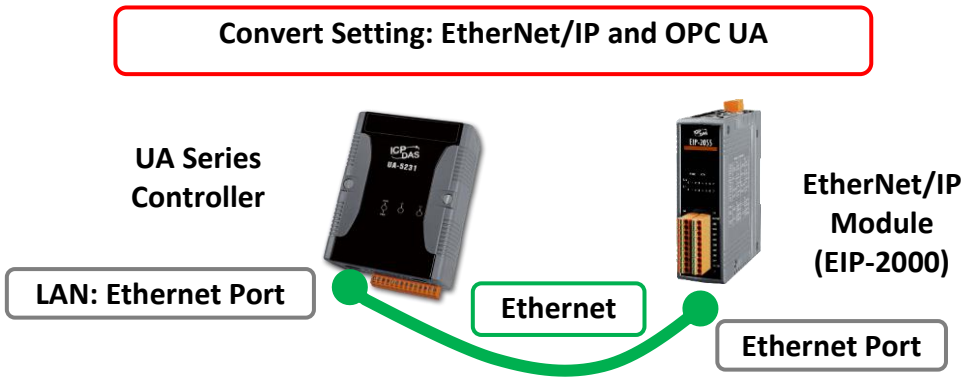
FAQ-CNV-03: UA Web UI Function Wizard – Module Communication Conversion - How to Convert (EtherNet/IP) EIP / OPC UA ? (Use EIP-2060)

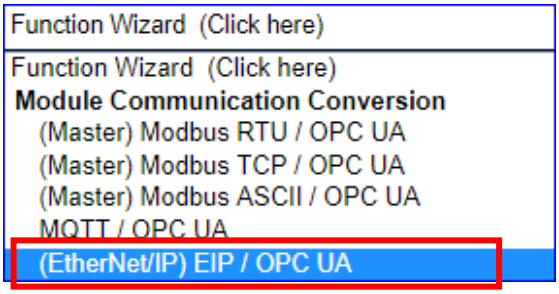
EIP / OPC UA Conversion include the conversion of OPC UA and **EtherNet/IP** protocols. With the **OPC UA Service** function, the OPC UA Server can read and write the EIP-2000 device that connected to the controller.

- **Convert Setting: EIP and OPC UA**



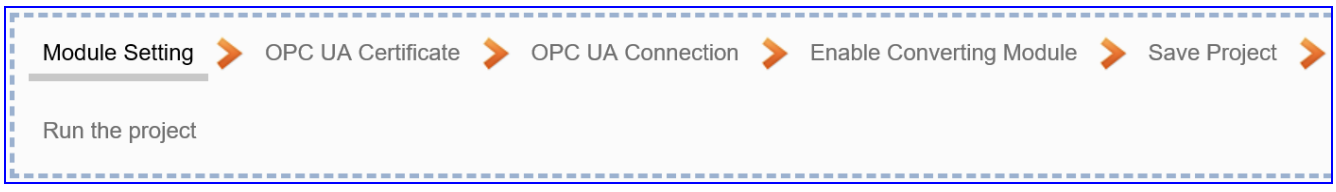
Note: The hardware/network connection methods please see the UA Manual Chapter 2 .

When UA series controller connects the EIP-2000 module (via Ethernet, as EIP-2060 in the picture) and through the OPC UA server to read/write the I/O data of the EIP-2000 module, user can choose the item [**(EtherNet/IP) EIP / OPC UA**] of the "Module Communication Conversion" in the Function Wizard.



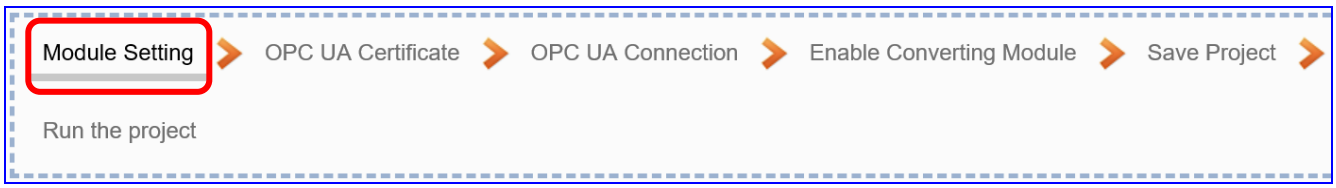
[Step Box]:

The Step Box of the [**(EtherNet/IP) EIP / OPC UA**] has the steps as below. When enabling the Step Box, it auto enters the first step setting page (The step with a bold underline means it is the current step.). The user just needs to follow the "Step Box" step-by-step and then can complete the project quickly and rightly.



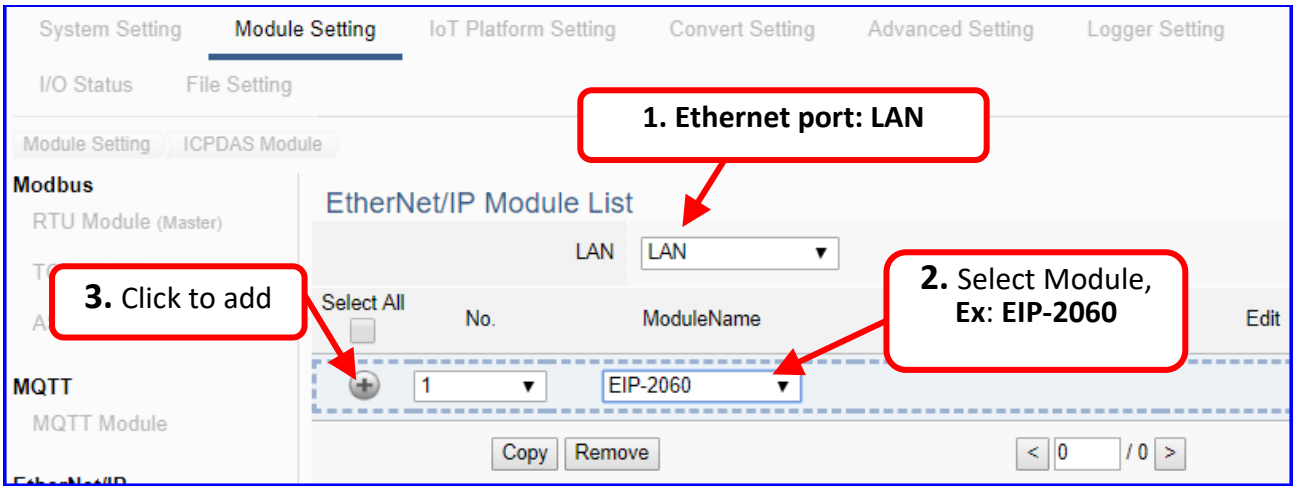
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Step 1. Module Setting

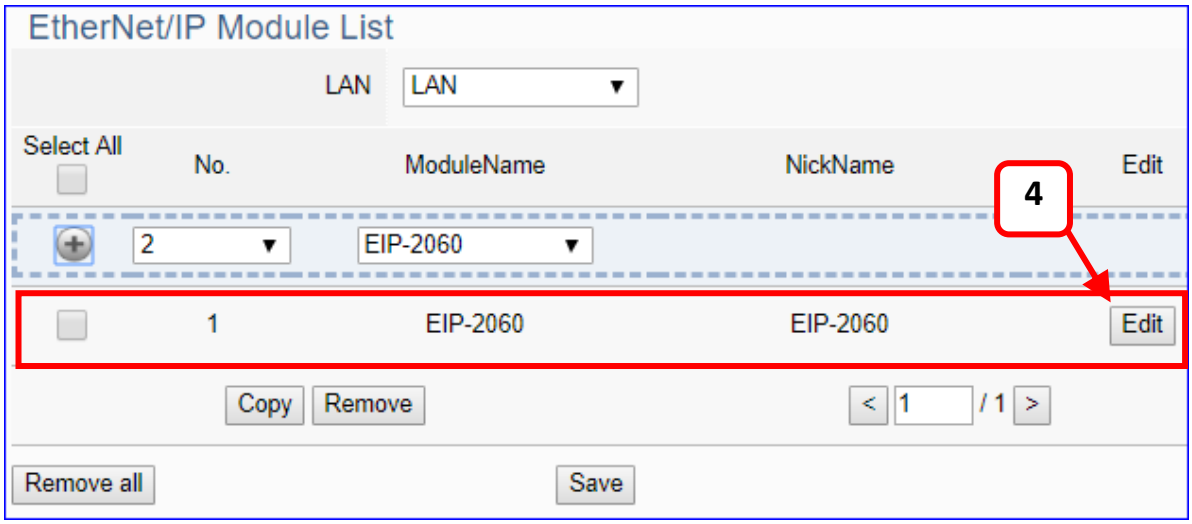


It auto-enters the first step of **Step 1 [Module Setting].** This page is for setting the communication values of the connected modules.

The Ethernet port is LAN for connecting with the EtherNet/IP module. Select one EIP-2000 series model and click [⊕] button could add a new module.



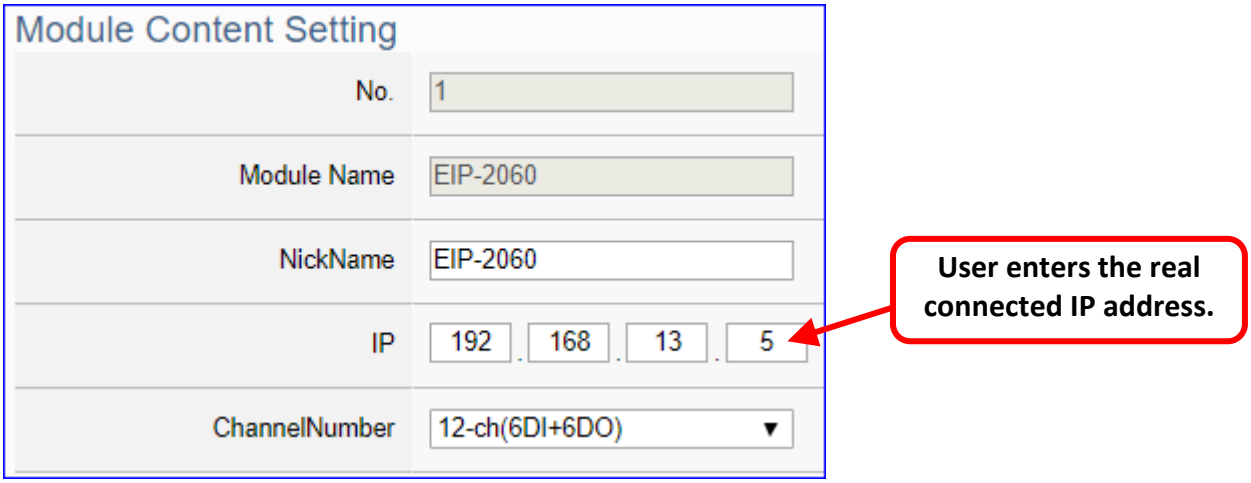
Add a module (No.: 1, Name: EIP-2060) as below. Then click [Edit] button to enter the “Module Content Setting” page.



If set up a wrong module, user can click the box in the left side of the module number and click the [Remove] button to delete the module.

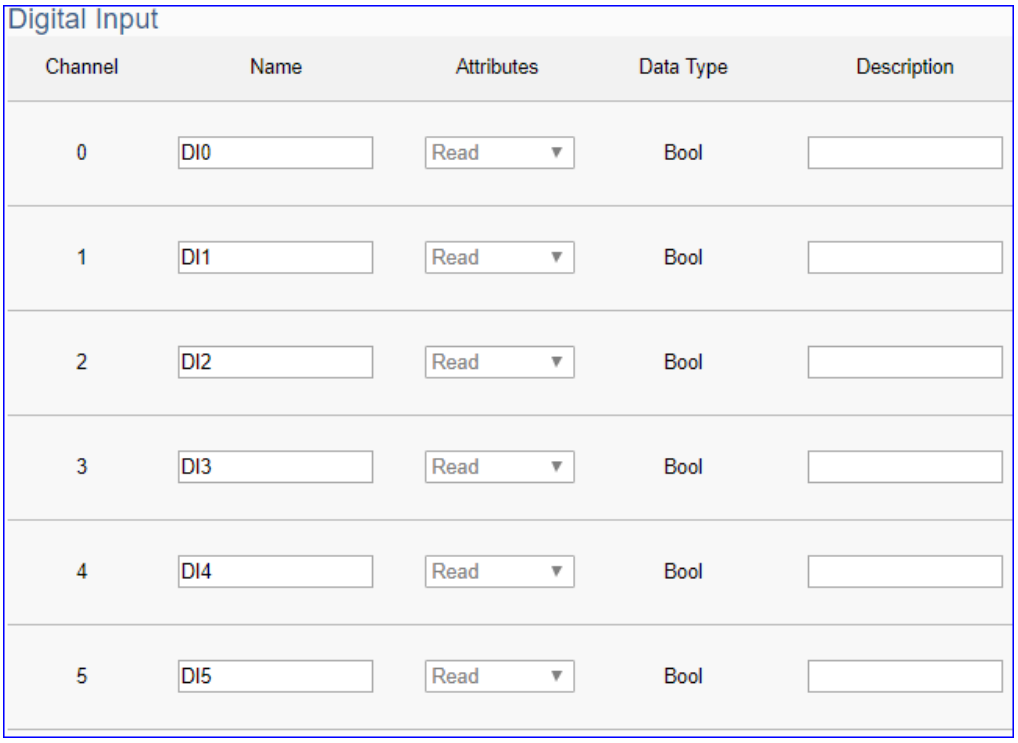
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[**Module Content Setting**] page:

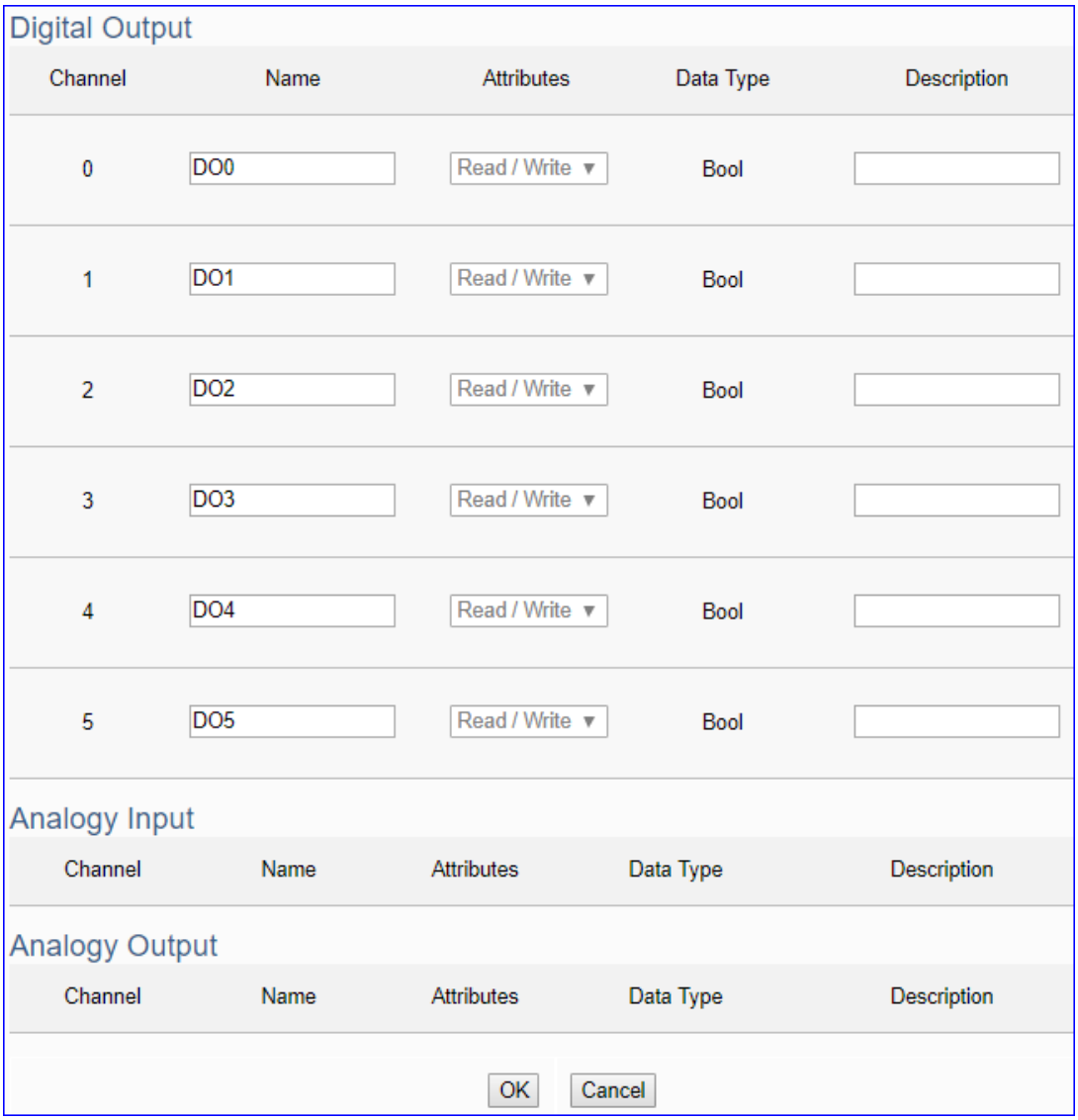


Module Content Setting	
No.	The module number in the module list (Not editable here)
Module Name	The selected model number. (Not editable here)
NickName	User can give a nick name, default: selected model number
IP	Enter the IP address of the connected EIP module. This example: IP address of the EIP-2060 is 192.168.13.5
ChannelNumber	Select the number of the I/O channels.

The system will auto-display the selected I/O table by the order of Digital Input / Digital Output / Analogy Input / Analogy Output. This example: EIP-2060 have 6 DI and 6 DO.



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Digital Input / Digital Output / Analogy Input / Analogy Output	
Channel	Channel number will auto-display according to the model. (Not editable) Default: Number from 0.
Name	User can define the name. Default: DI#, DO#, AI#, AO# Available: number, English character, underline “_”, dash line "-", cannot be a space, slash "/", Chinese character, and other symbols.
Attributes	Display data attribute of the variable. (Not editable) Include Read, Read/Write…
Data Type	Display data type of the variable. Include: Bool, Short, Unsigned Short, Long, Unsigned Long, Float, Double, String
Description	For users set up the description for the channel.
OK / Cannel	Click [OK] to save and exit the page settings. Click [Cancer] to exit without saving.

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Step 2. OPC UA Certificate



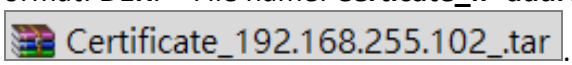
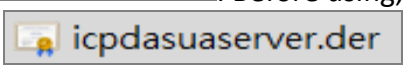
Click the next step, and enter the **Step 2 [OPC UA Certificate]** of the UI setting.
This step is about setting the OPC UA Certificate for the security and encryption, e.g. upload, download, delete certificate. **If the user's project does not need to use the secure encryption connection, please skip this step and click the next step directly.**

In the [**OPC UA Certificate**] step, users can add mutual credentials on both side's devices to strengthen security encryption.

① First, 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. (If there was an old certificate file in UA, remove it first.)

② 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.



File Setting > OPC UA Certificate > Upload the file to the controller	
Trusted Certificate	**Select File**: select the OPC UA Trusted Certificate file in PC. **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 PC. • File format: **DER**. File name: **Certicate_IP-address_.tar** e.g. . Before using, decompress to **icpdasuaserver.der**, as below. 

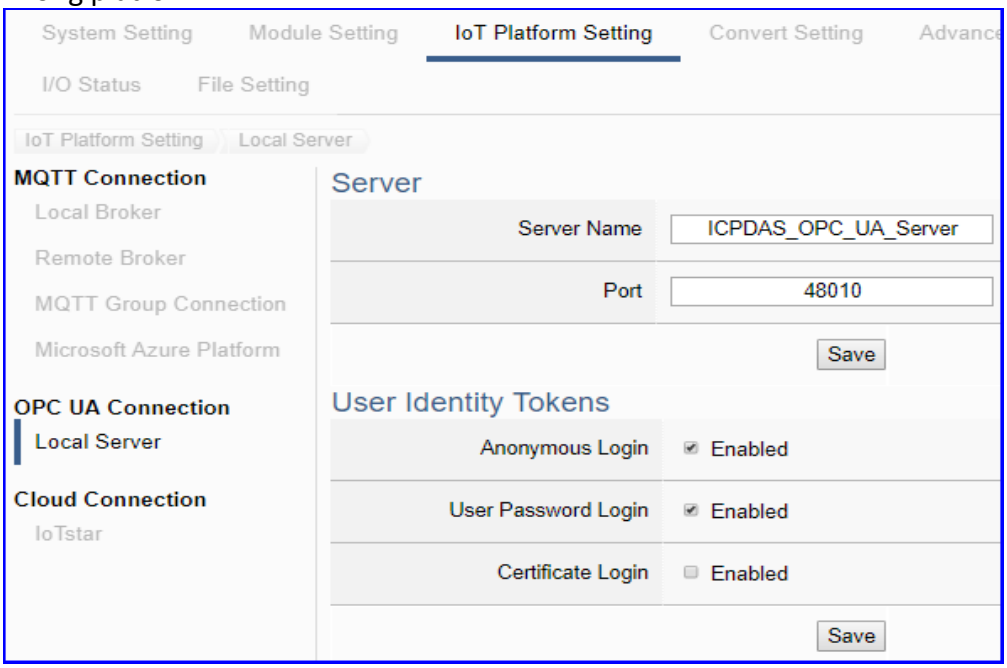
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Step 3. OPC UA Connection



Click the next step, and enter the **Step 3 [OPC UA Connection]** of the UI setting.
This page is for setting the IoT platform and the OPC UA connection, e.g. the server name, port, login identity information, etc.

We select the “EIP / OPC UA” conversion at the beginning, so this step will auto enter the [**OPC UA Connection > Local Server**] page of IoT Platform Setting. The “Step Box” will prevent the user from selecting the wrong platform.



OPC UA Connection > Local Server Setting –Server	
Server Name	Display the active OPC UA Server name. Not editable. System value: 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 Setting –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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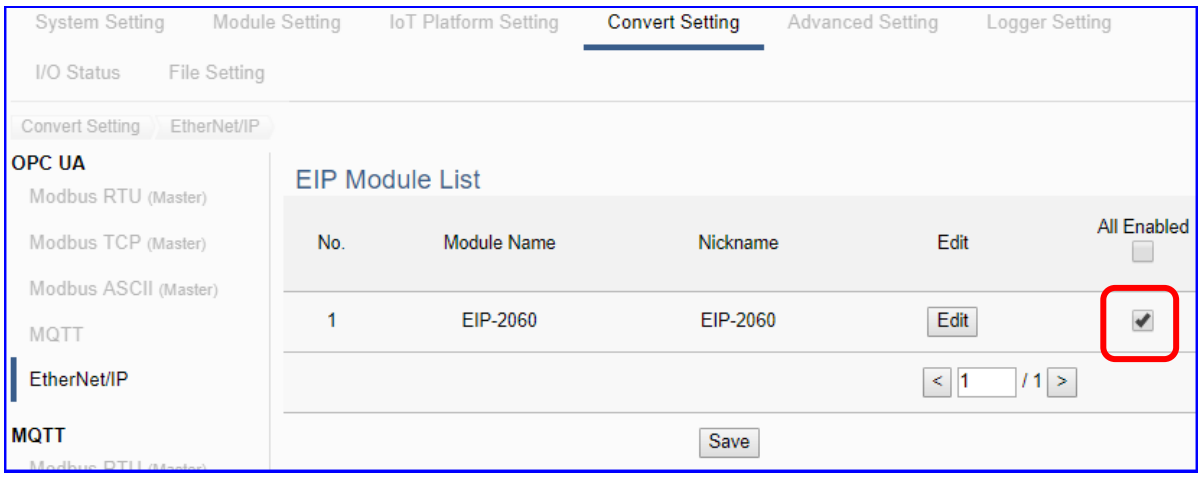
Step 4. Enable Converting Module



Click the next step, and enter the **Step 4 [Enable Converting Module]** UI setting
This step is for enabling the EIP / OPC UA conversion.

We select the “EIP / OPC UA” conversion at the beginning, so this step will auto enter the [**OPC UA > EtherNet/IP**] page of Conversion setting. The “Step Box” will prevent the user from selecting the wrong platform.

Check the box of the module to enable all I/O. If want to enable some I/O, click “Edit” to select I/O one by one.

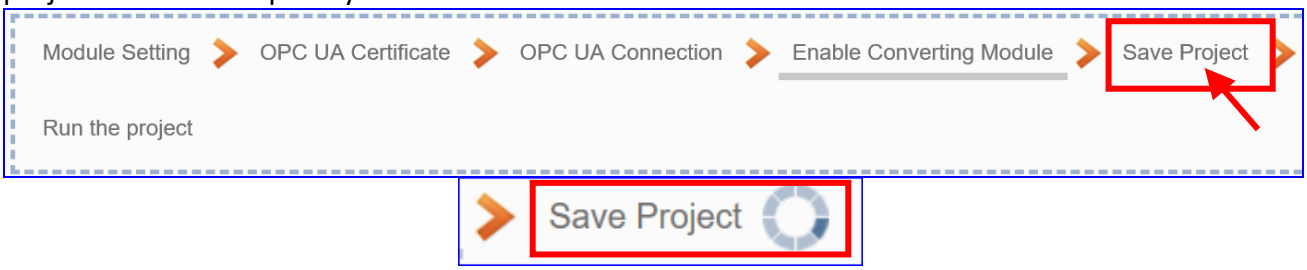


Convert Setting > OPC UA > EtherNet/IP - EIP Module List	
No.	The module number in the module list (Not editable here)
*Module Name / Nickname	The module name set in the module list (Not editable here)
Edit	If user wants to enable some I/O channels for conversion, click [Edit] of that module to enter the “Variable Tale” setting. It is normal to set all channels as enabled, and the conversion will not affect the unconnected channels.
All Enabled	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.

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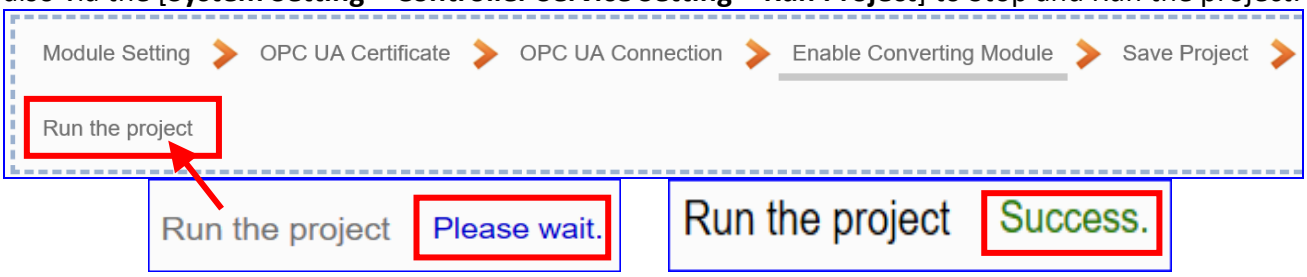
- **Step 5. Save Project**

The setting of this example is finished now. Click the next step **[Save Project],** the Step Box will show an animation as below picture, that means the project is saving. When the animation vanished, the project is saved completely.



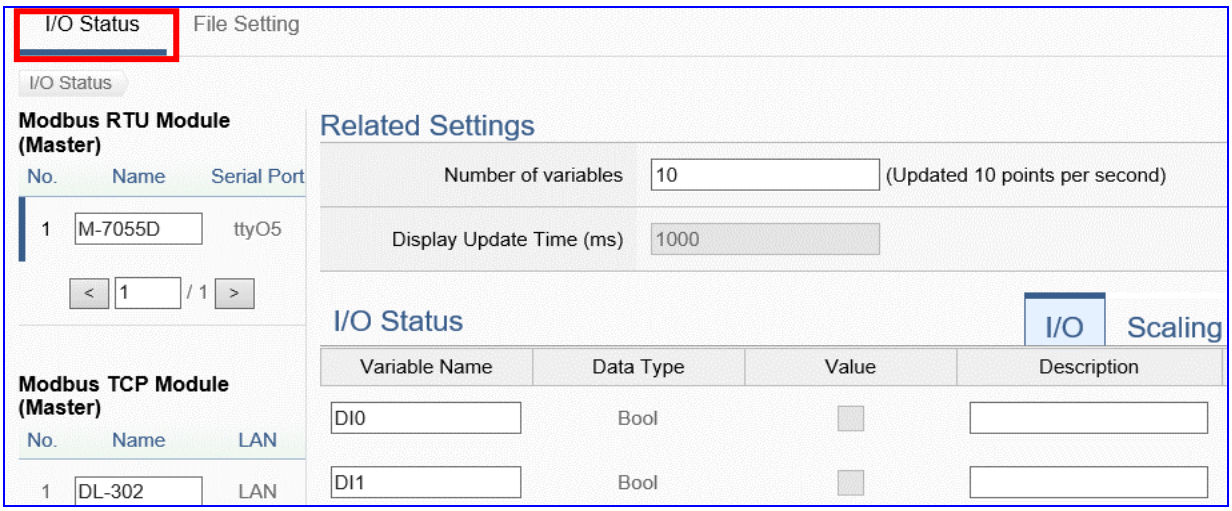
- **Step 6. Run the Project**

The project, after saving, needs to be executed. Click the next step **[Run the Project]**. This step can also via the [**System Setting** > **Controller Service Setting** > **Run Project**] to Stop and Run the project.



When the words "**Please wait**" disappears, the new words "**Success**" appears, that means the UA controller is running new project successfully. Then the Step Box will disappear automatically now, and back to the first screen view of the Web UI.

The new project now completes the setting, uploading and running in the UA controller and can process the conversion communication. Users can see the I/O status from the menu [**I/O Status**]. For more about the Web UI settings, please refer to UA Manual CH4 and CH5.



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