

# Basic Operation Manual

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## Chapter 1: Installation and Uninstallation

### Section 1: Installation

#### Installation environment requirements

Recommended for installation on Windows 10 and above

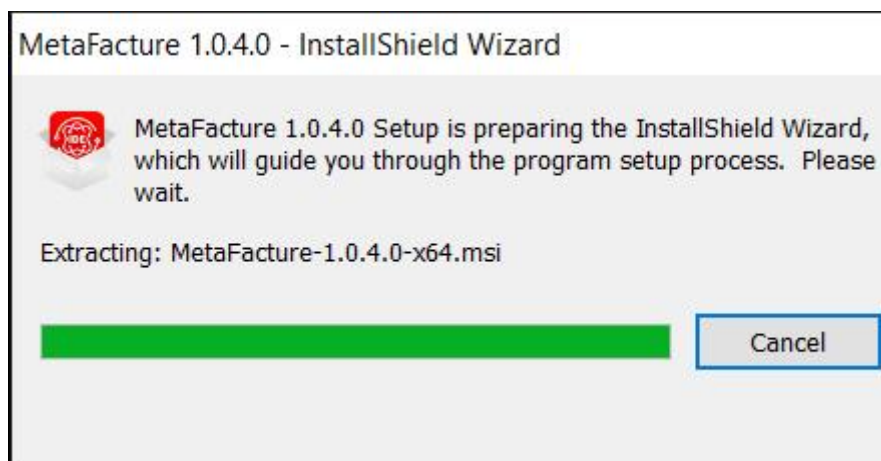
#### Download the MetaFacture installation package

Go to the official website of Sinotech Online Help

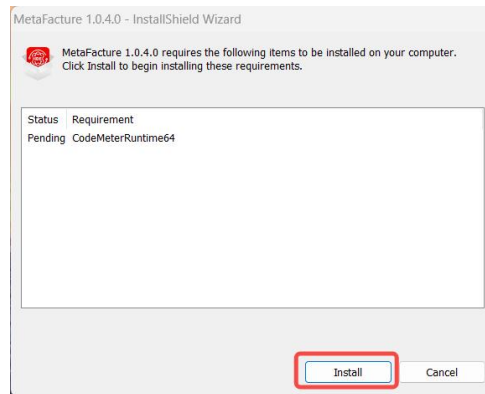
<https://www.sinsegye.com.cn/OnlineHelp/index.html>, click [Automation Product Line] - [MetaFacture IDE] - [Download Link] on the left side of the homepage, and select the desired version **Metafacture -<version>-x64.exe from the installation package list displayed on the right to download** to the local directory.

#### Installation process

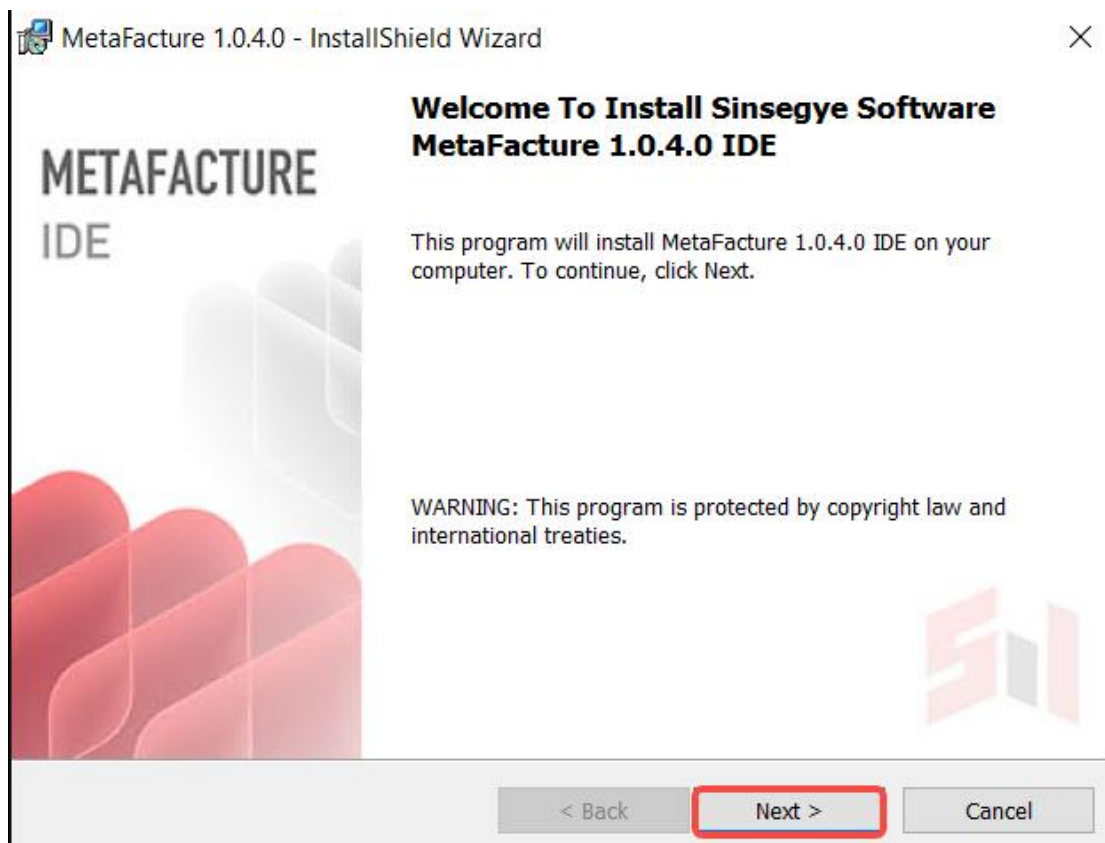
1. In the same system, multiple MetaFacture versions are not supported to coexist at the same time, nor is overwriting installation supported. Please **uninstall the old MetaFacture first**, and then install the new version of MetaFacture.
2. After the download is complete, enter the local directory and double-click the downloaded installation package



3. Then follow the instructions of the installation assistant to complete the installation . If you are installing MetaFacture for the first time , you need to install the dependent software first: click [Install] ( CodeMeter will start after the installation is complete , click the close button in the upper right corner to close it)



4. After the dependent software is installed, the MetaFacture installation wizard will automatically appear. Click [Next > ]



5. Select [I accept the terms in the license agreement], and click [Next>]

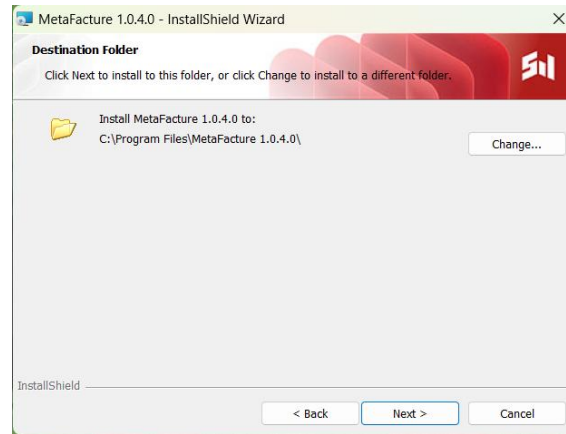


6. Select [I have read the information], click [Next >]

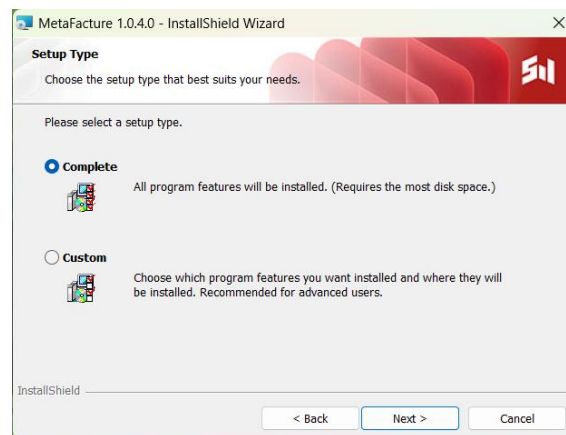


7. Select the installation path and click [Next >]: By default, it is installed to C:\Program Files\ MetaFacture <version>\ ( **recommended installation method** ).

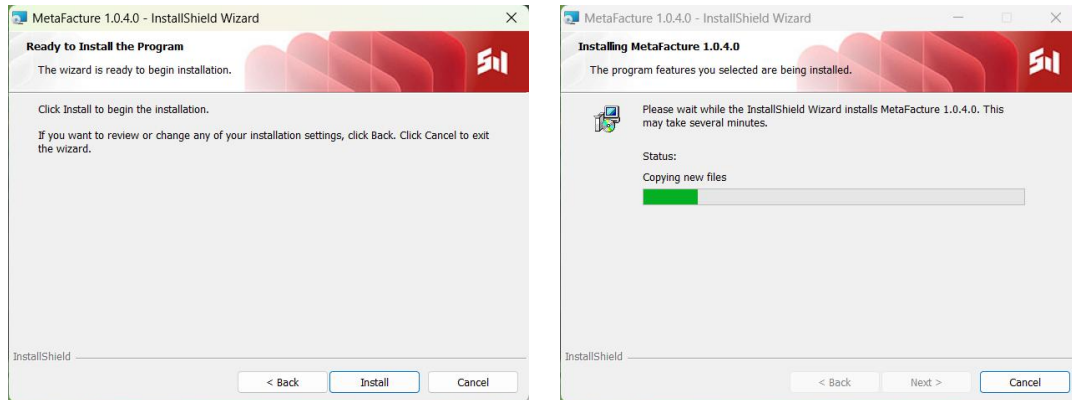
If you want to install to another path, you can click [Change...] and select an installation directory . The installation path **cannot contain Chinese characters**.



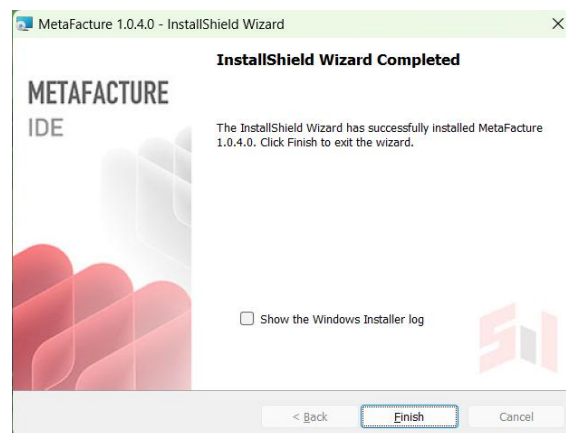
8. Select the installation method and click [Next >]: Select [Complete] to install MetaFacture with all its functions (recommended installation method). You can also select [Custom] to install some functions.



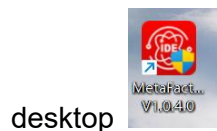
9. Click [Install], and the Complete installation will take about 20 minutes.



10. After the installation is complete, click [Finish] to close the installation wizard.



During the installation process, a desktop shortcut will be automatically created on the

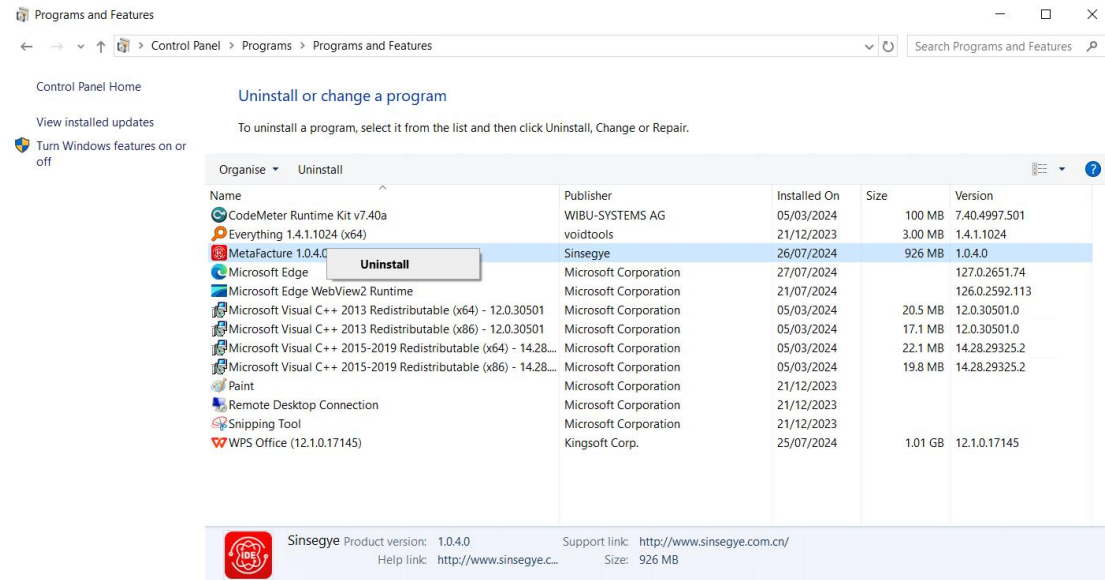


## Section 2: Uninstall

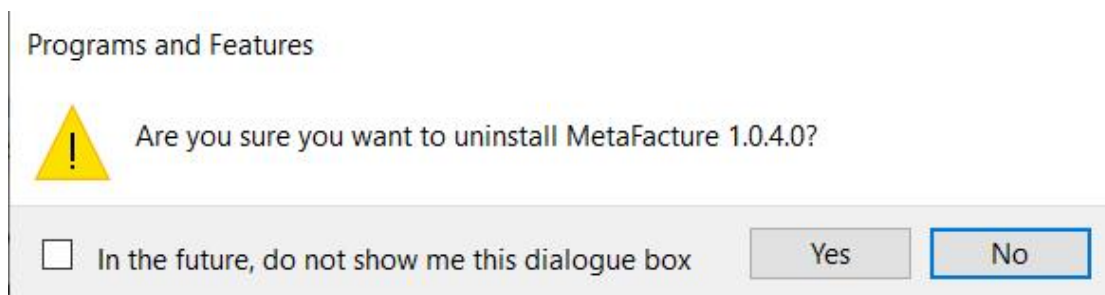
you exit MetaFacture before uninstalling .

1. Open [Control Panel] > [Programs] > [Programs and Features]
2. MetaFacture to be uninstalled in the program list , and select [Uninstall (U)] from the right-click menu.





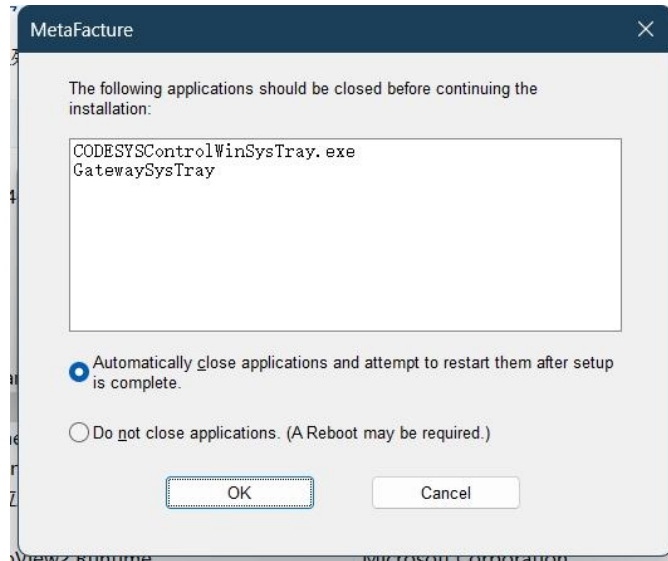
3. Select [Yes] in the confirmation box that pops up.



4. Wait for the uninstall to complete

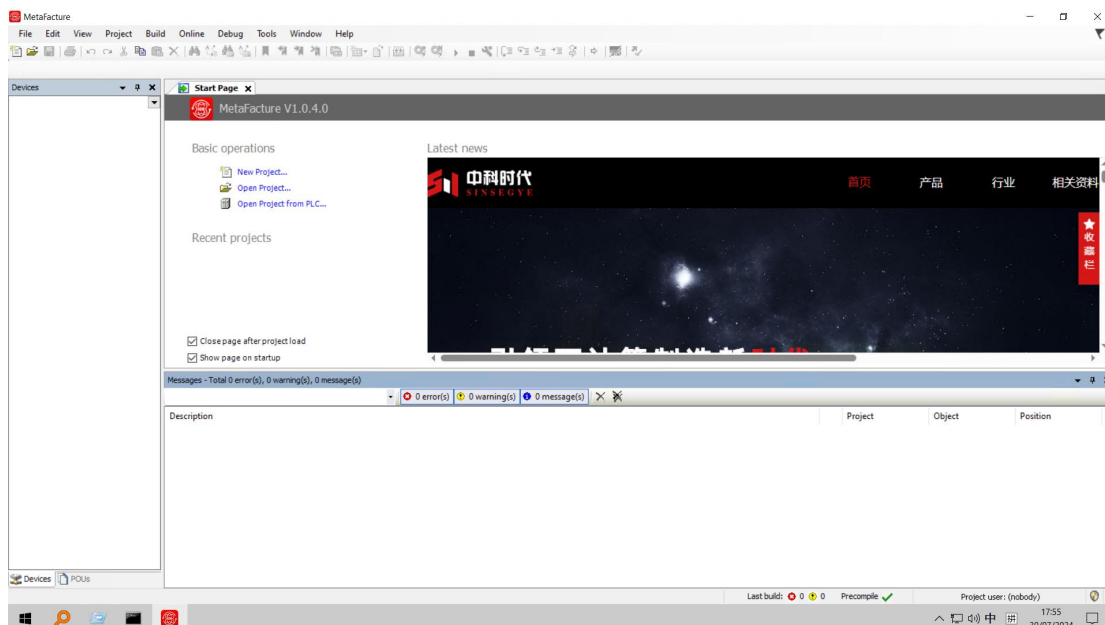


5. If some pop-up windows pop up during the process, such as the one shown below (the system has both CODESYS and METAFACURE installed, and it will appear when uninstalling METAFACURE), confirm and close them.



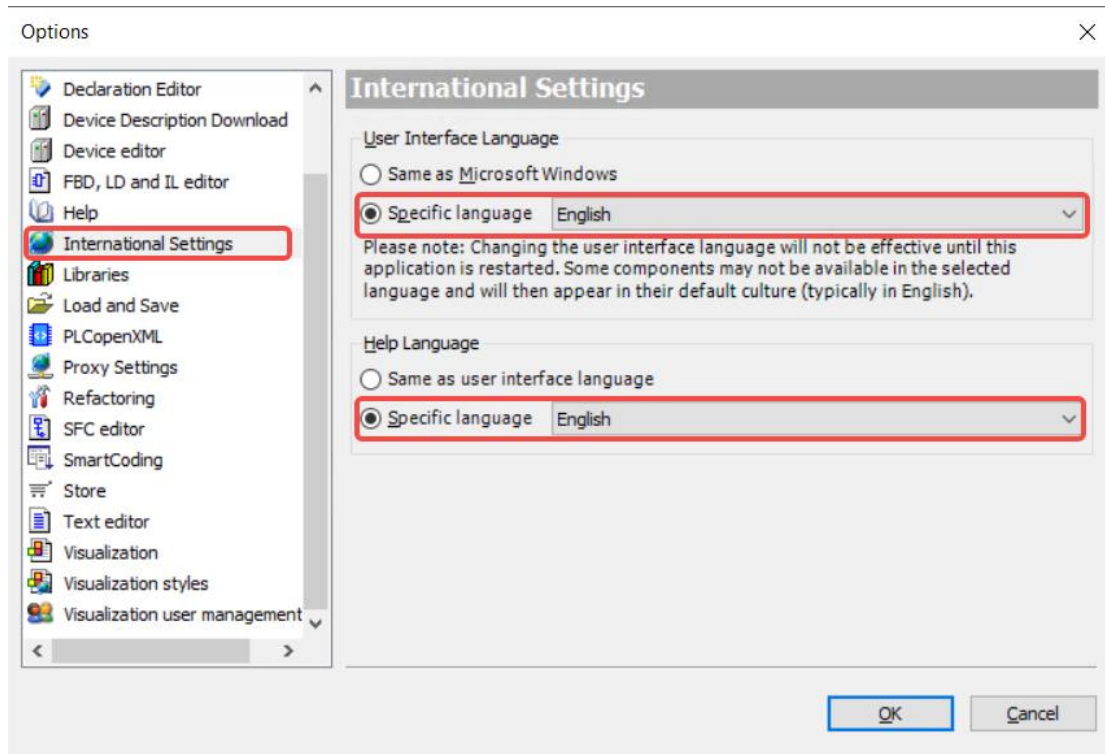
## Section 3: Startup

1. Double-click the desktop shortcut to start
2. Or go to the installation directory and click **MetaFacture.exe** (e.g. C:\Program Files\ MetaFacture 1.0.4.0\METAFACUTURE\Common\MetaFacture.exe)



## Chapter 2: Set the user interface language to Simplified Chinese

Select [Tools] - [Options] from the menu bar , select [Language Settings] on the left side of the [Options] dialog box that opens, and specify the user interface language as Simplified Chinese. After setting, restart MetaFacture .



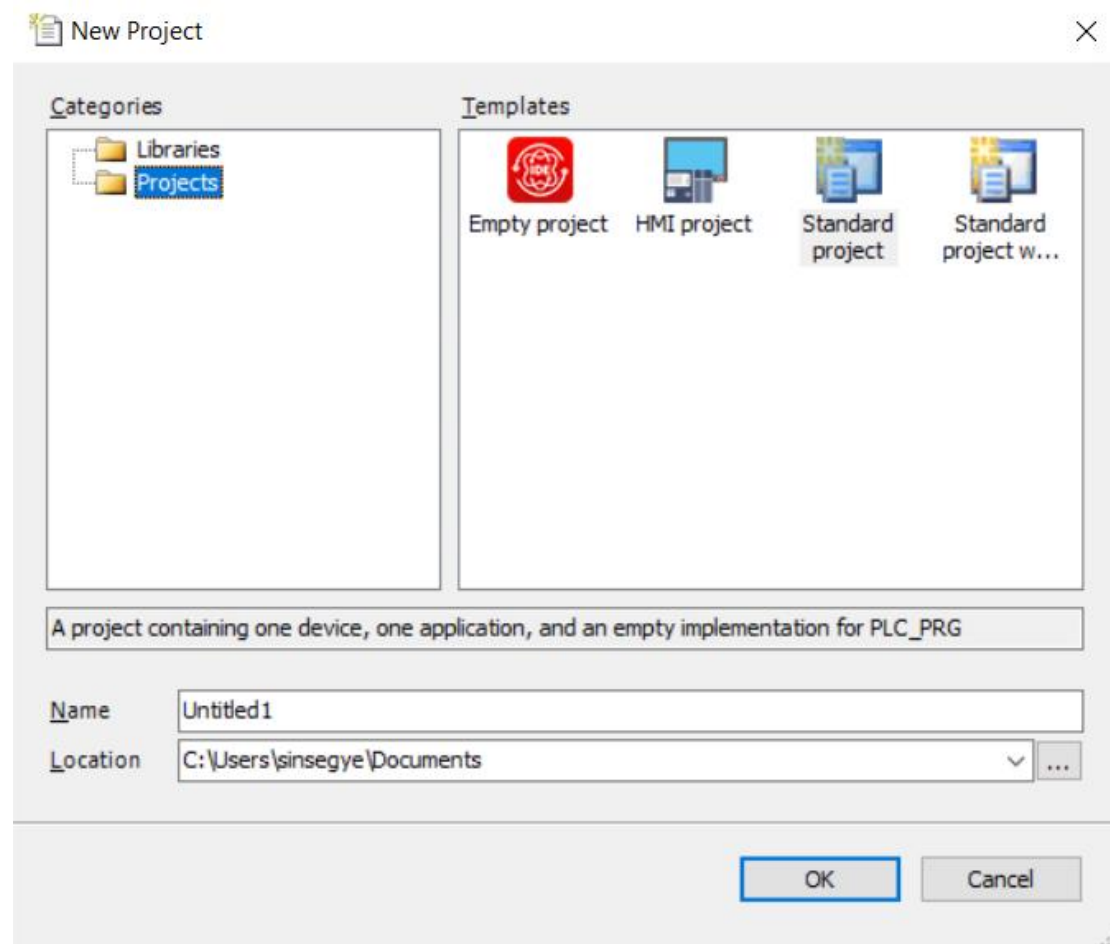
## Chapter 3: New Construction

### Section 1: New Project Panel

There are four ways to open the [New Project] panel:

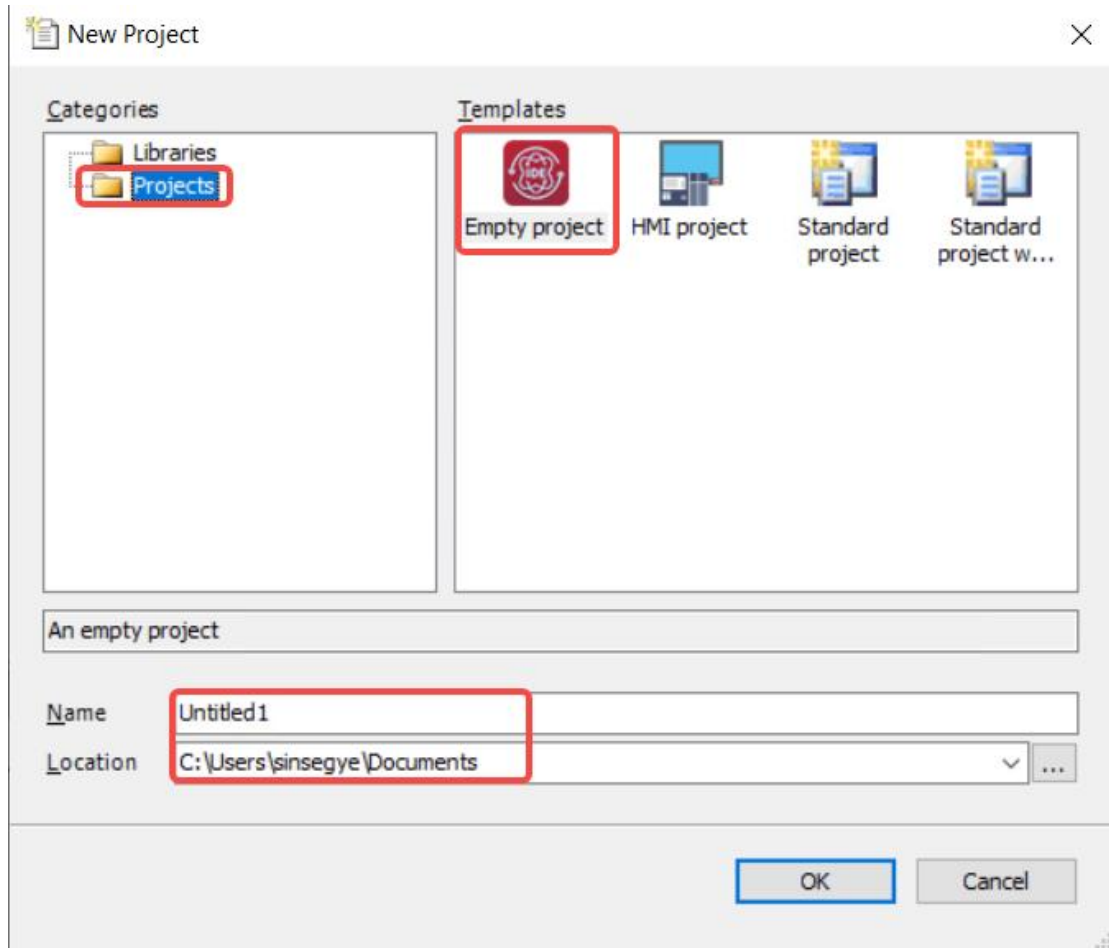
1. In the menu bar, click [File] > [New Project]
2. ... ] under [Basic Operations] on the start page.
3. Click the New Project icon on the toolbar
4. Use shortcut keys Ctrl+N

The [New Project] panel is displayed as follows:

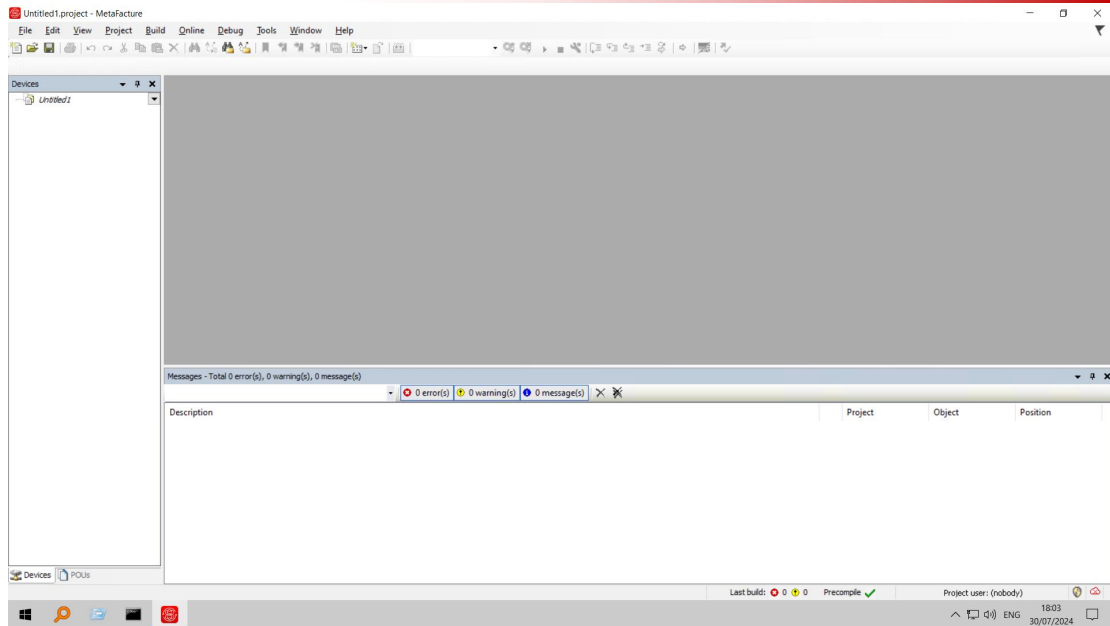


## Section 2: Create a new empty project

1. Open the [New Project] panel, select [Project] as the category, select [Empty Project] as the template, enter a custom project name and the location to save the project, and click [OK].

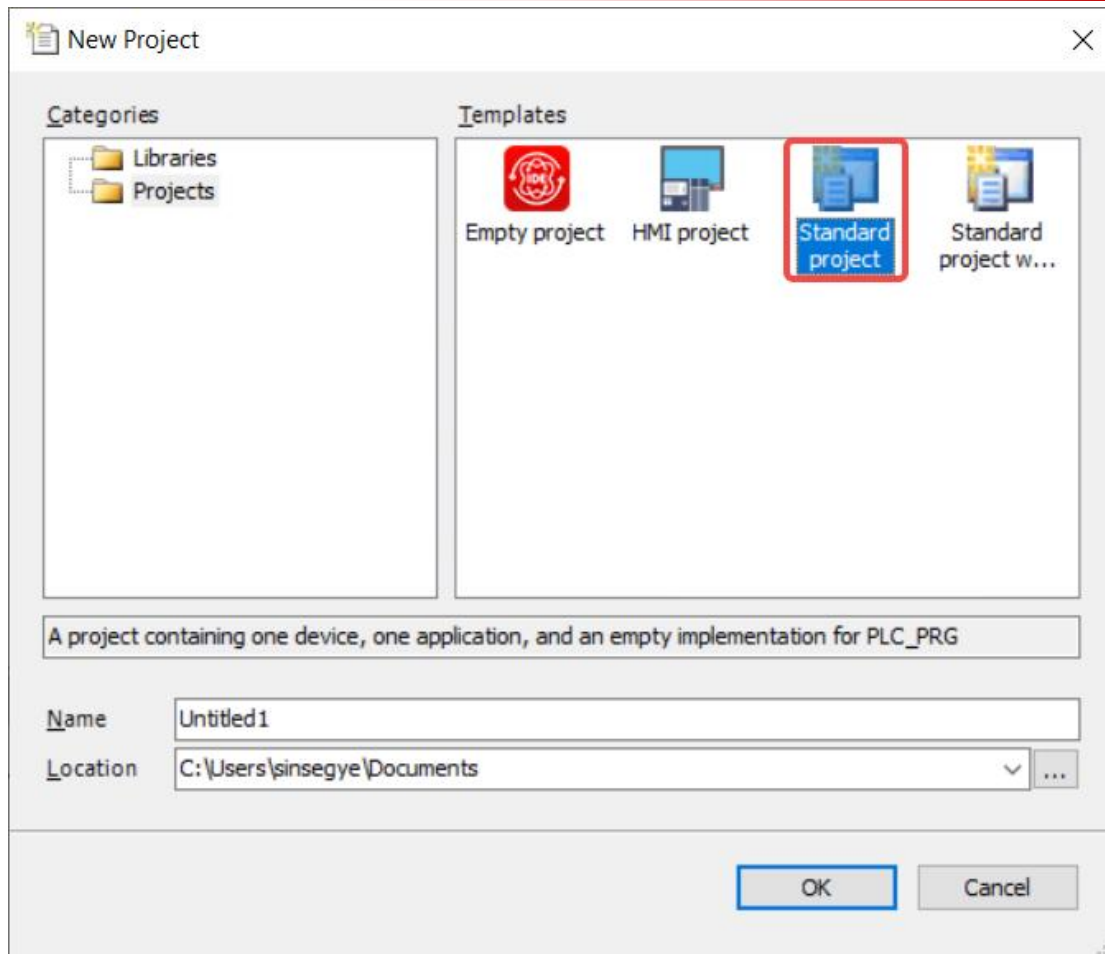


2. Create an empty project with only the project name, and users need to add PLC , etc.

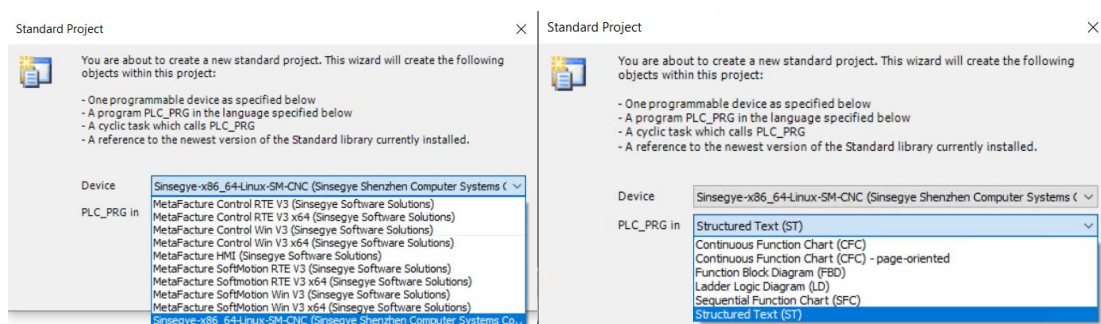


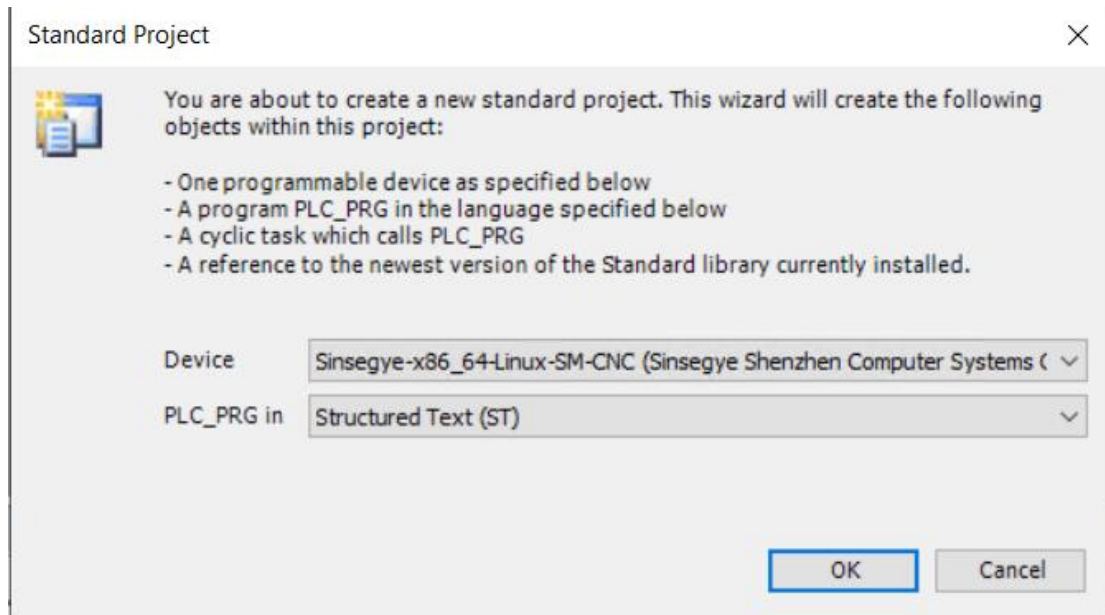
## Section 3: Create a new standard project

1. Open the [New Project] panel, select [Project] as the category, select [Standard Project] as the template, enter the custom project name and project save location below, and click [OK].

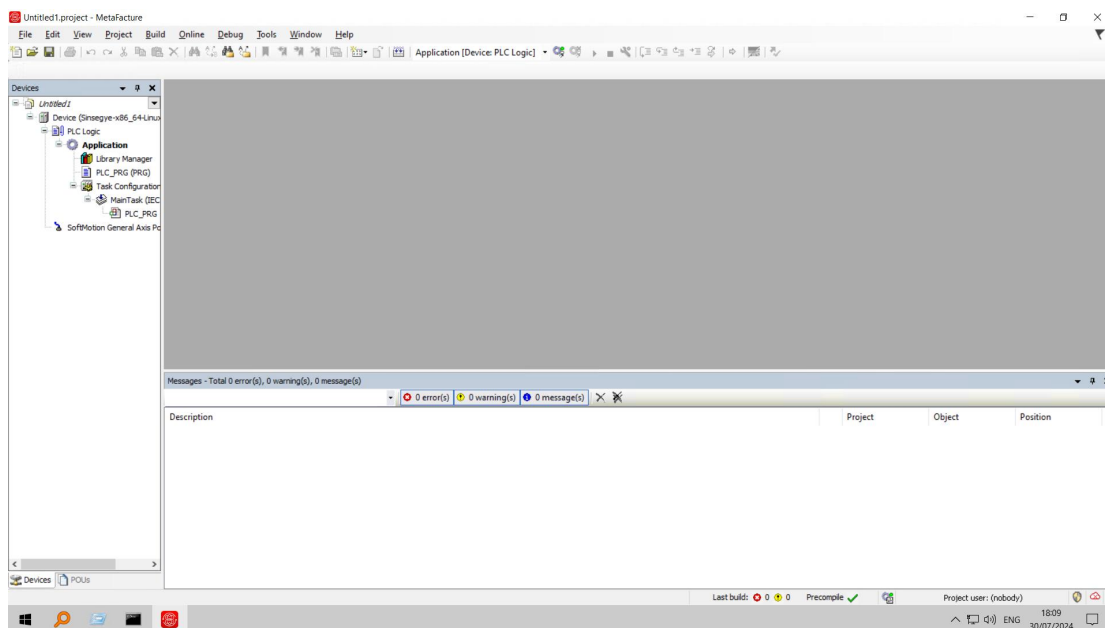


2. Select a PLC in the [Device (D) ] list (If the corresponding PLC is not found , please confirm that the device has been installed correctly. For specific steps, please refer to [Add Device](#) ) Select a commonly used programming language in the [ PLC\_PRG ( P ) ] drop-down list and click [OK].





3. A standard project is created, including a device [ Device ], an application [ Application ], and a [ PLC\_PRG (PRG) ] program.





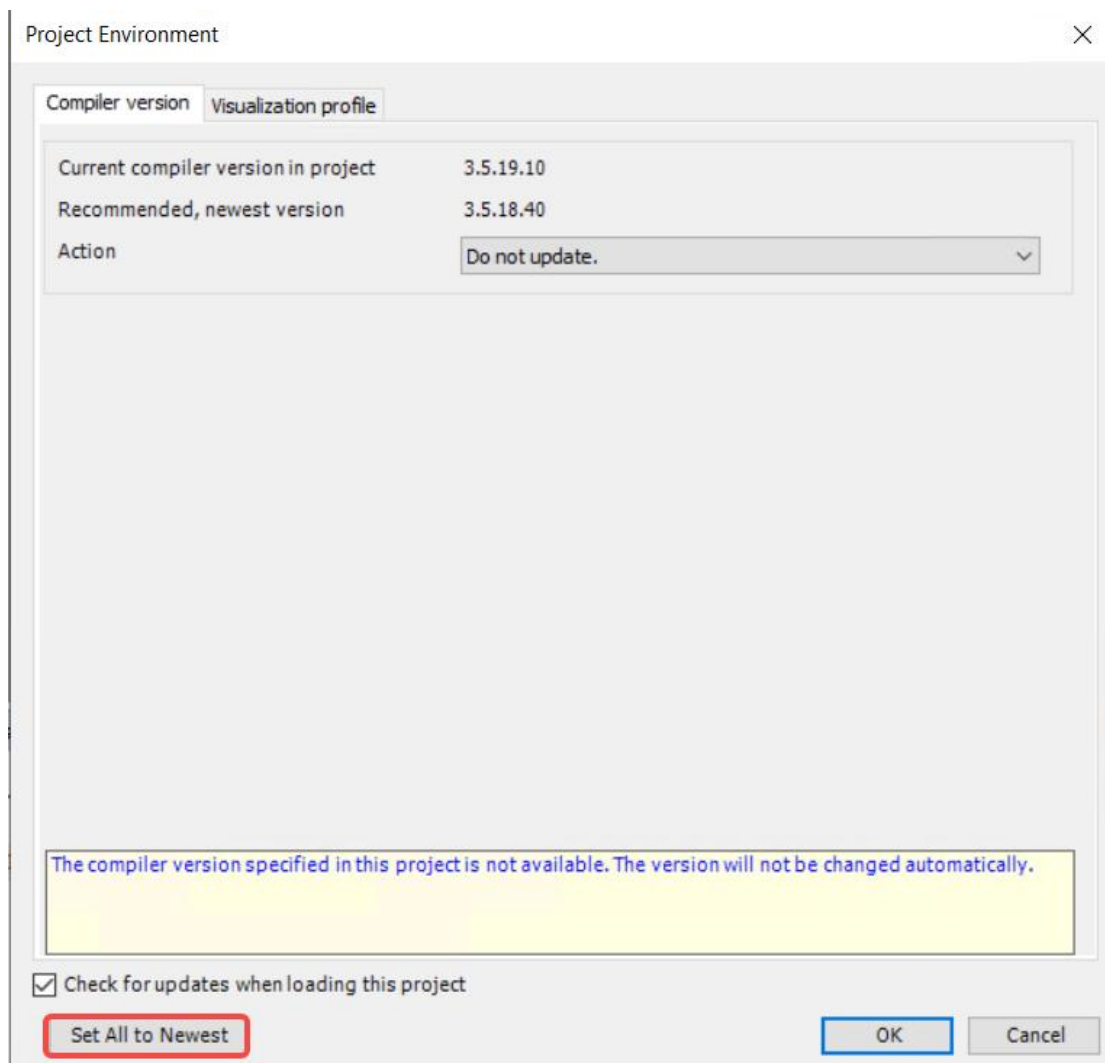
## Chapter 4: Open Project

Menu bar [File] - [Open Project], in the opened system file management window, select the project file you want to open, and click [Open].

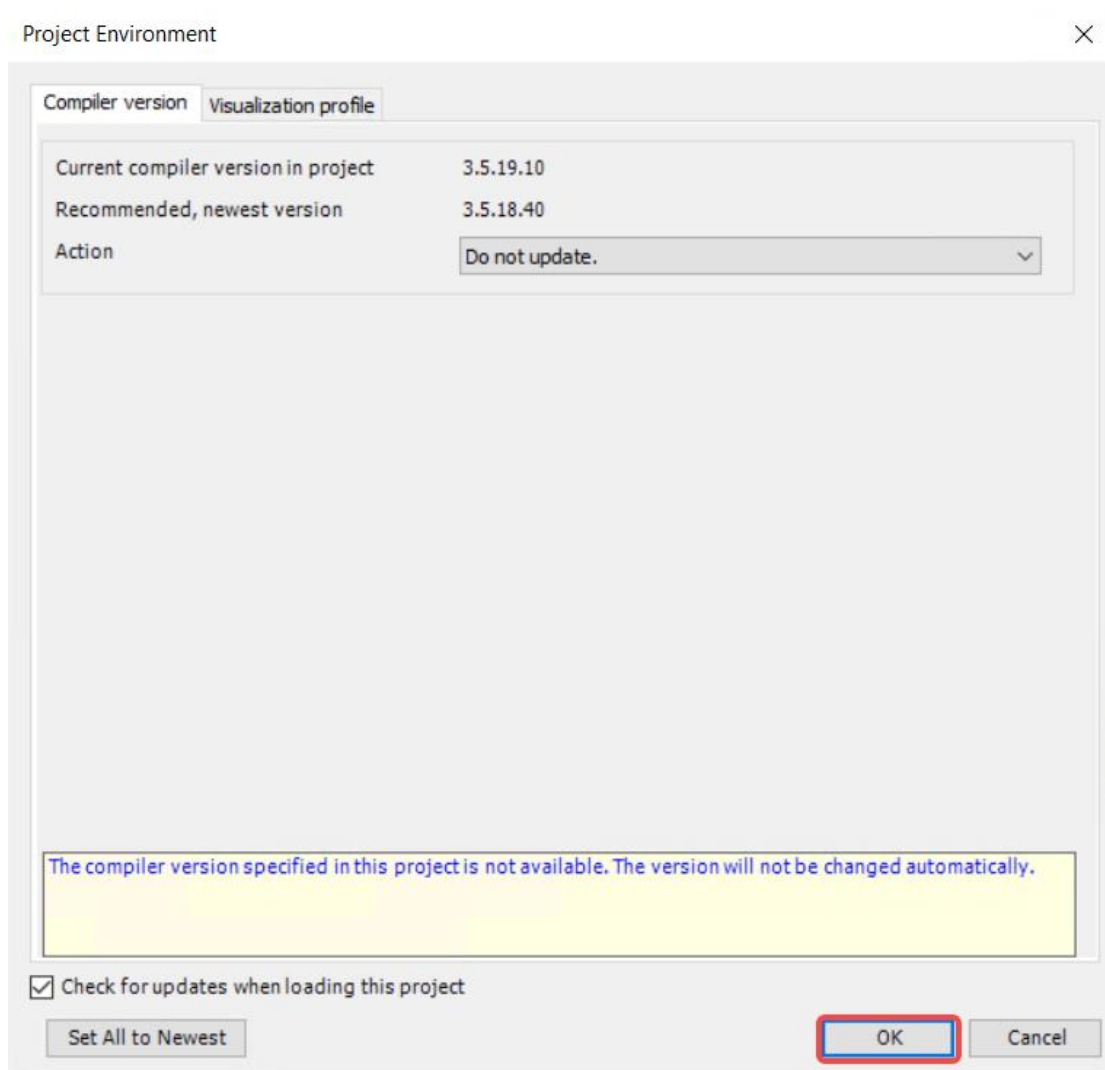
### Section 1: The [ Project Inspection ] dialog box pops up

when you open a project created by an earlier version of MetaFacture . It may also pop up when you open a project created by a third-party IDE .

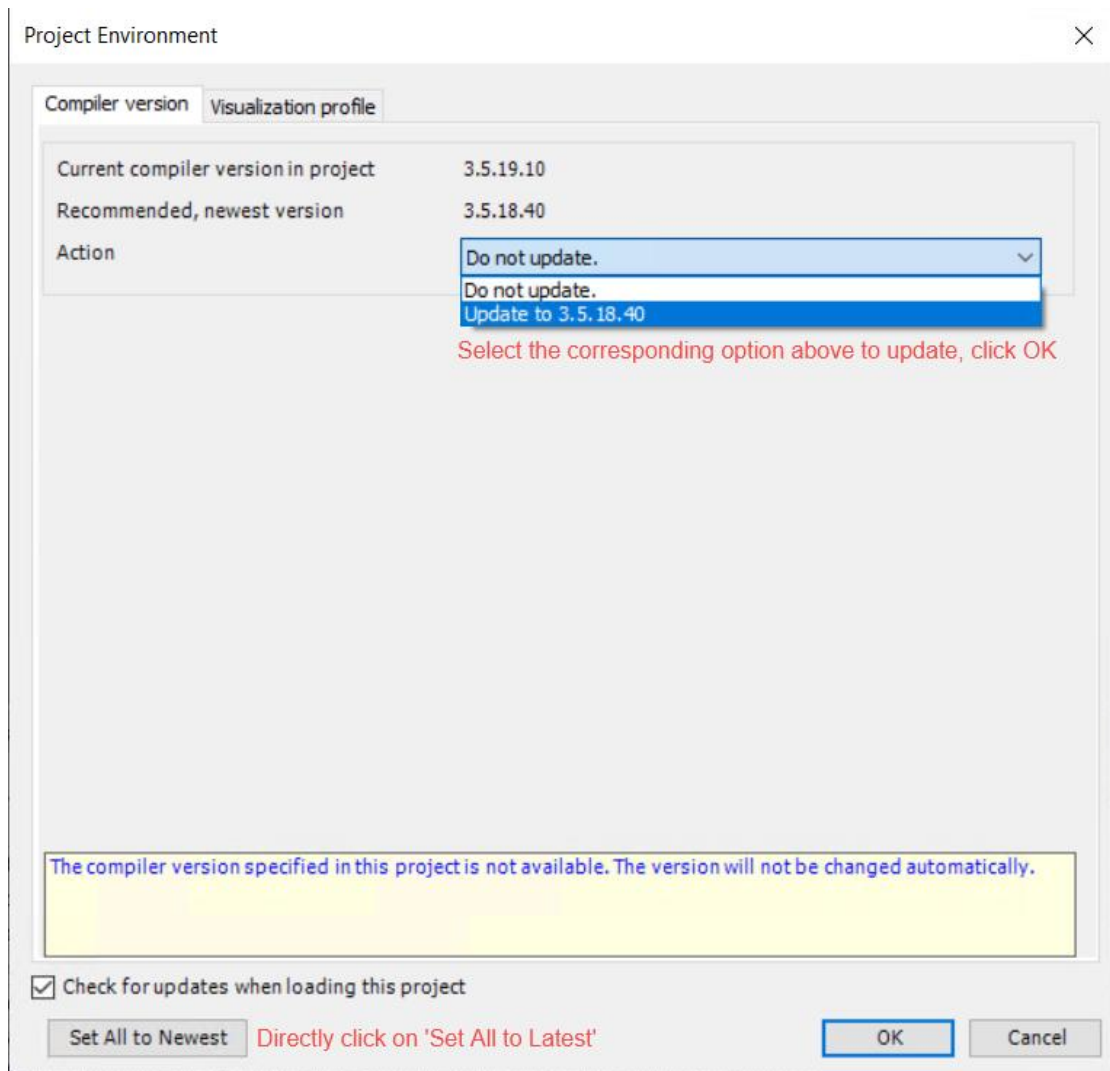
1. Select the last option [ Continue with this version ] and click [ Finish ]
2. The [Project Environment] settings dialog box pops up. If you want to change the original project file, you can click [Set All to Latest], click [OK] in the pop-up dialog box, and then click [OK] to close the Project Environment dialog box.



3. If you want to keep the original project file, click [OK] in the [Project Environment] dialog box to close it. Then go to the menu bar and click [File] - [Save As] to save the project with a new name.



4. The original project file will be automatically closed without any changes, and MetaFature will automatically open the newly saved project file. Click [Project] - [Project Environment] in the menu bar to open the project settings panel, update the module you want to update, or click [Set All to Latest] to update all modules. Then save the project file.

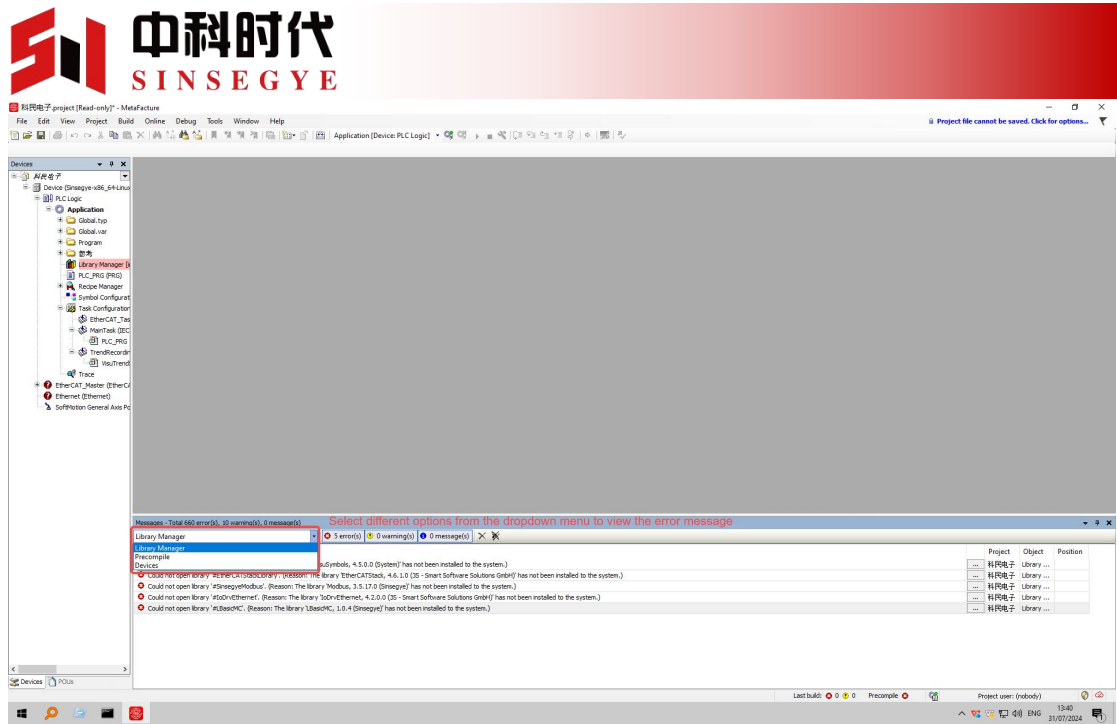


## Section 2: Whether to upgrade the project storage format

a project saved by an older version of MetaFacture or a third-party IDE, the dialog box shown below may pop up. Select [Yes] to close the dialog box and continue editing the project.

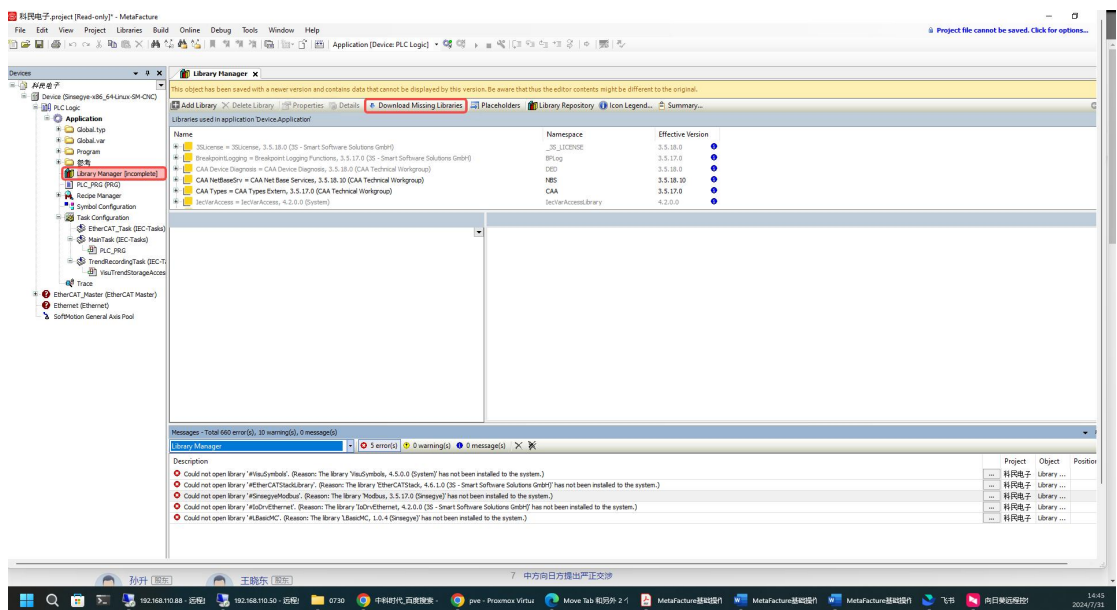
## Section 3: Open Project Error

After opening the project, click [Compile] - [Generate Code] in the menu bar, and see an error in the [Message] window. How to solve it?



## The device description for xxxx is missing

Open [Tools] - [Device Repository]. If there is a [Download Missing Description] button on the page, click it. This will solve the error reported by the driver that comes with MetaFacture .



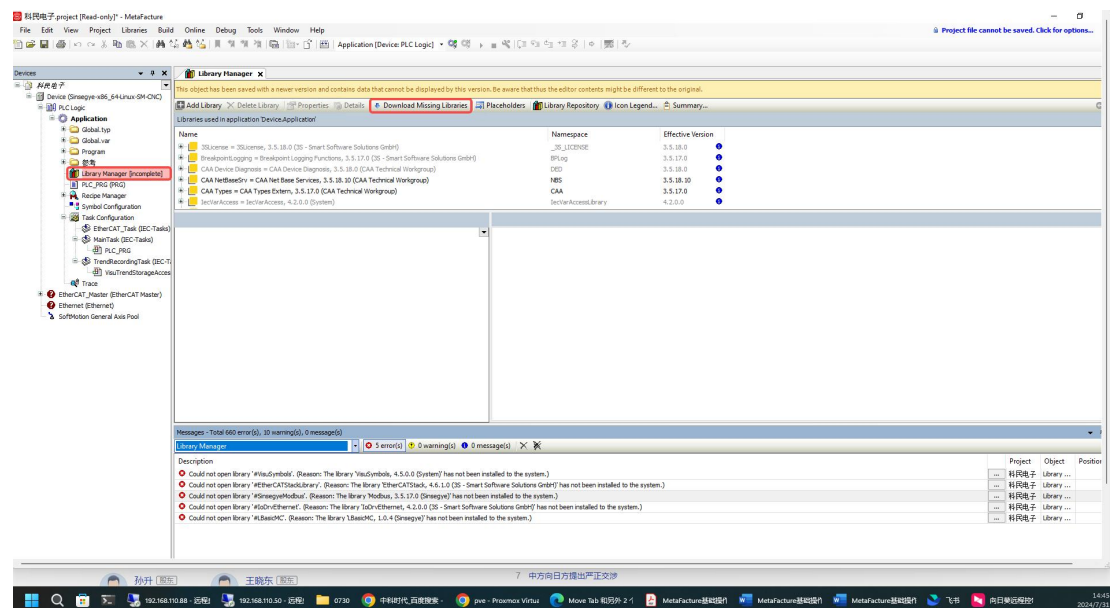
If a third-party hardware device reports a missing device description error, such as PLC, IO module, servo motor, etc., install the corresponding device description file

## Unable to open library xxxx (reason: placeholder library xxxx cannot be resolved)

Double-click the error, open the [Library Manager], select the library that cannot be parsed, click [Delete Library], and then add it again.

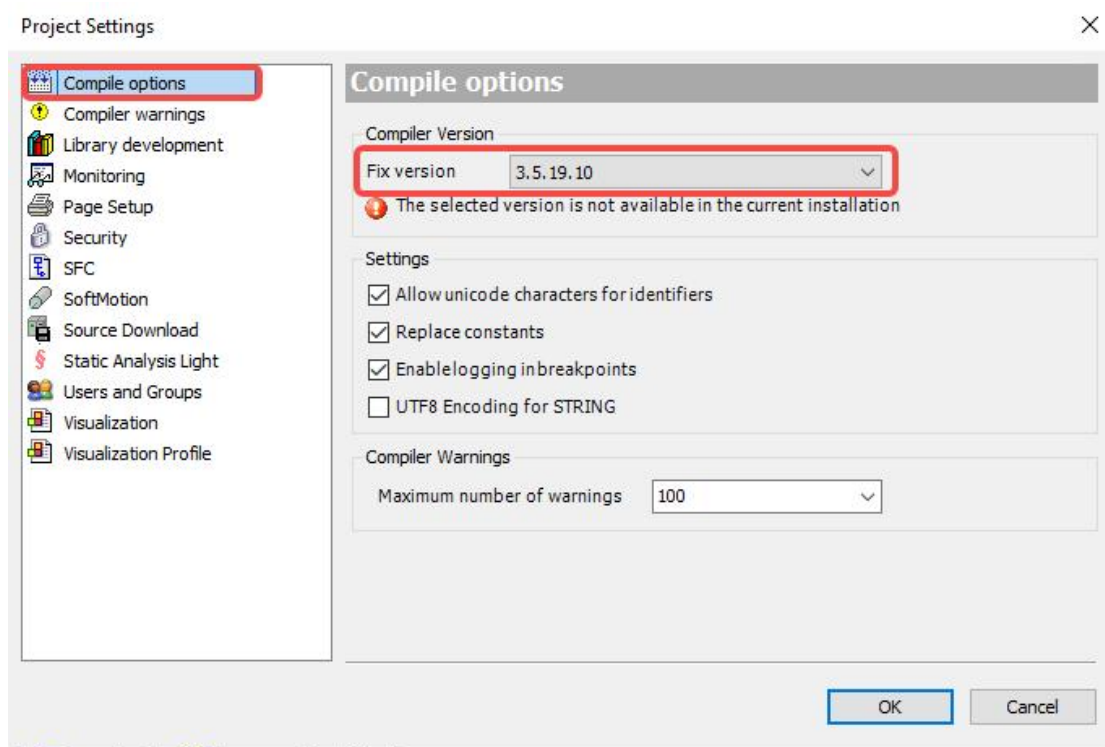
## Unable to open library xxxx (reason: library xxxx has not been installed on the system)

Double-click the error to open the [Library Manager], and click [Download Missing Libraries] in the opened window. If there is still an error after the download is complete, there may be a reference to a third-party library in the code. [Install](#) the referenced third-party library, and then [add the library](#) to the project .



## is not available in the installation

Click [Project] - [Project Settings] in the menu bar and change the [Fixed Version] in [Compile Options] to the current version.

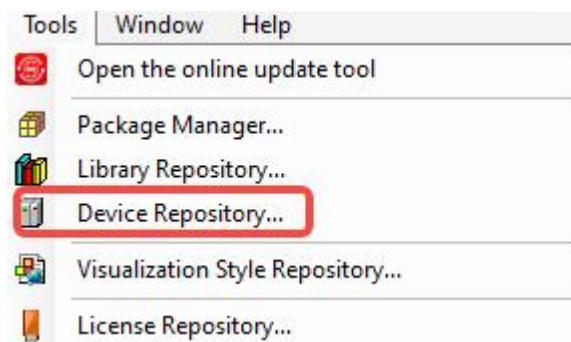


## Chapter 5: Add / Delete / Export Devices

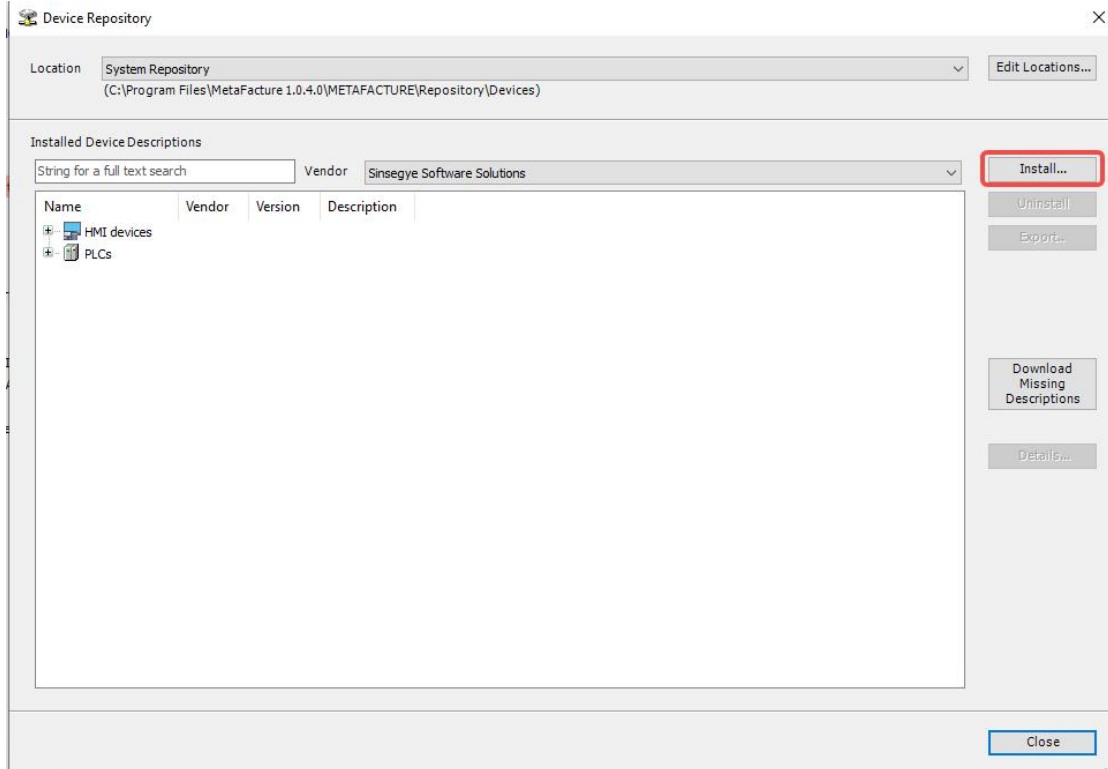
This example **adds** the SX5064 IIoT machine and SRC8200 to MetaFacture . Taking the IO module, **deleting** the SX5064 IIoT machine, and **exporting** the SRC8200 remote IO module as examples, this article introduces how to add, delete, and export devices in MetaFacture . When you want to operate other third-party devices, you can refer to this example.

### Section 1: Adding Devices

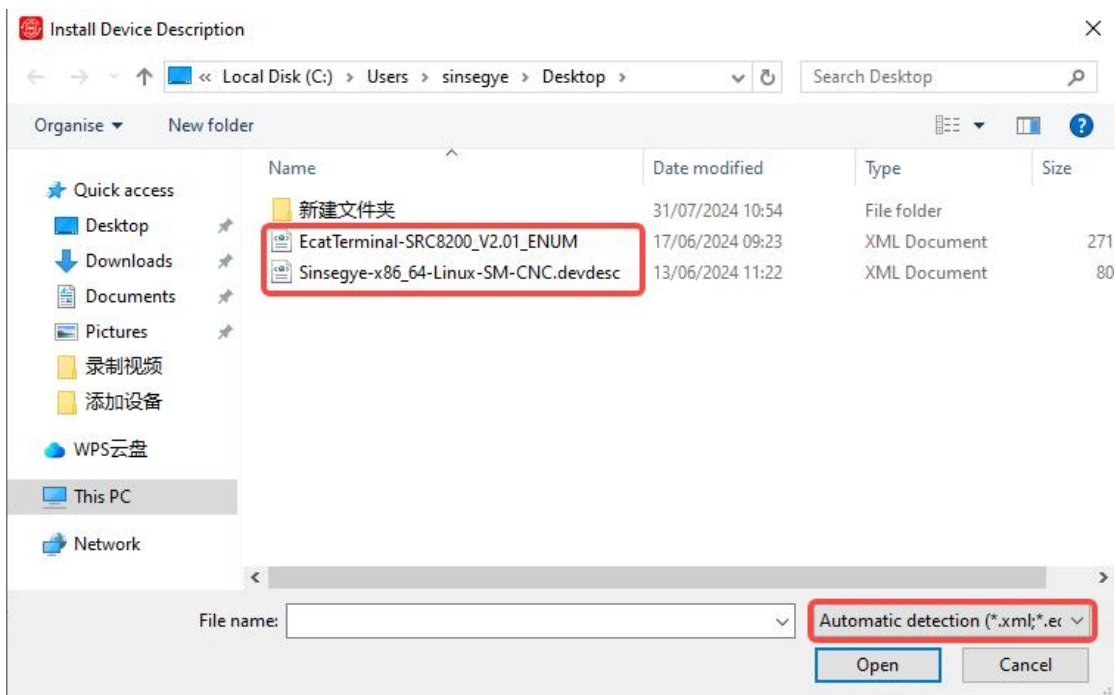
1. Download the corresponding Sinseggye device description file to your local computer.
2. In MetaFacture , click the menu bar [Tools] > [Device Repository ... ]



3. Click [Install (I)... ]

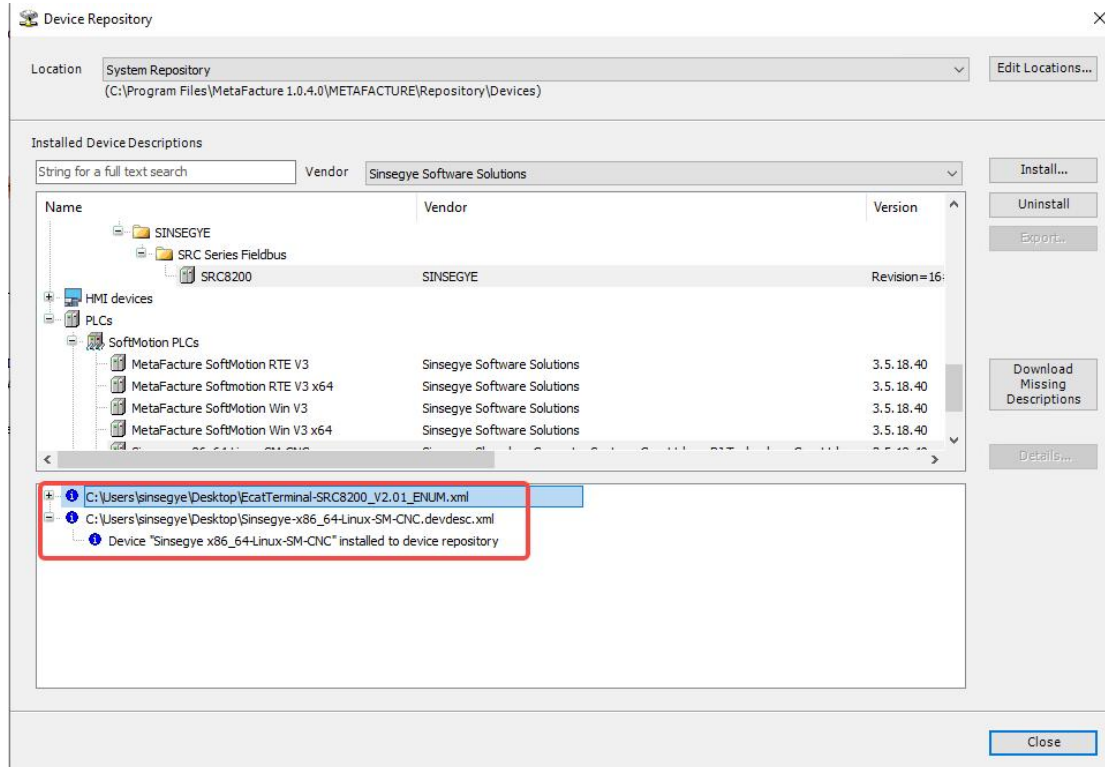


4. Find the directory where the device description files are stored, select [Automatic Detection] in the file detection type in the lower right corner , select the SX5 IIoT device description file " ***Sinsegys-x86\_64-Linux-SM-CNC.devdesc.xml*** " and the SRC8200 device description file " ***EcatTerminal-SRC\_V1.09\_ENUM\_2.xml*** ", and click [Open] to complete the installation.



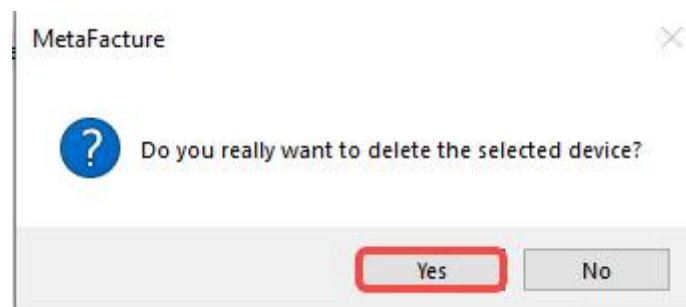
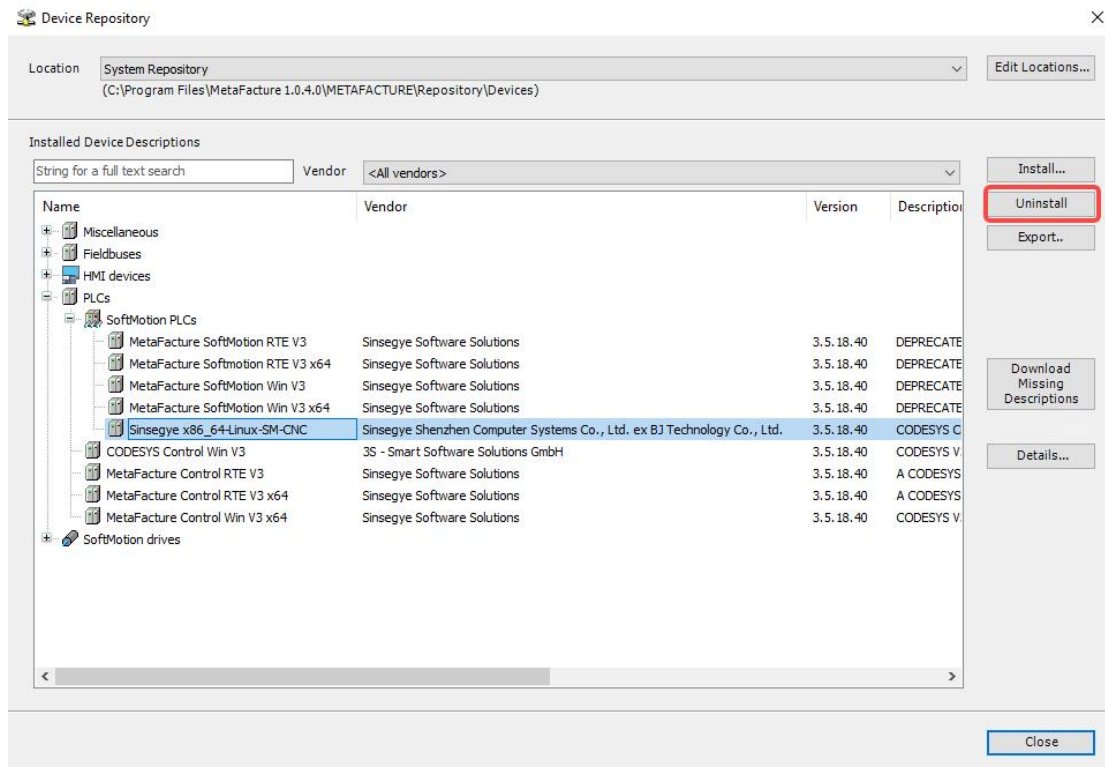
Click [Close] to close the dialog box.





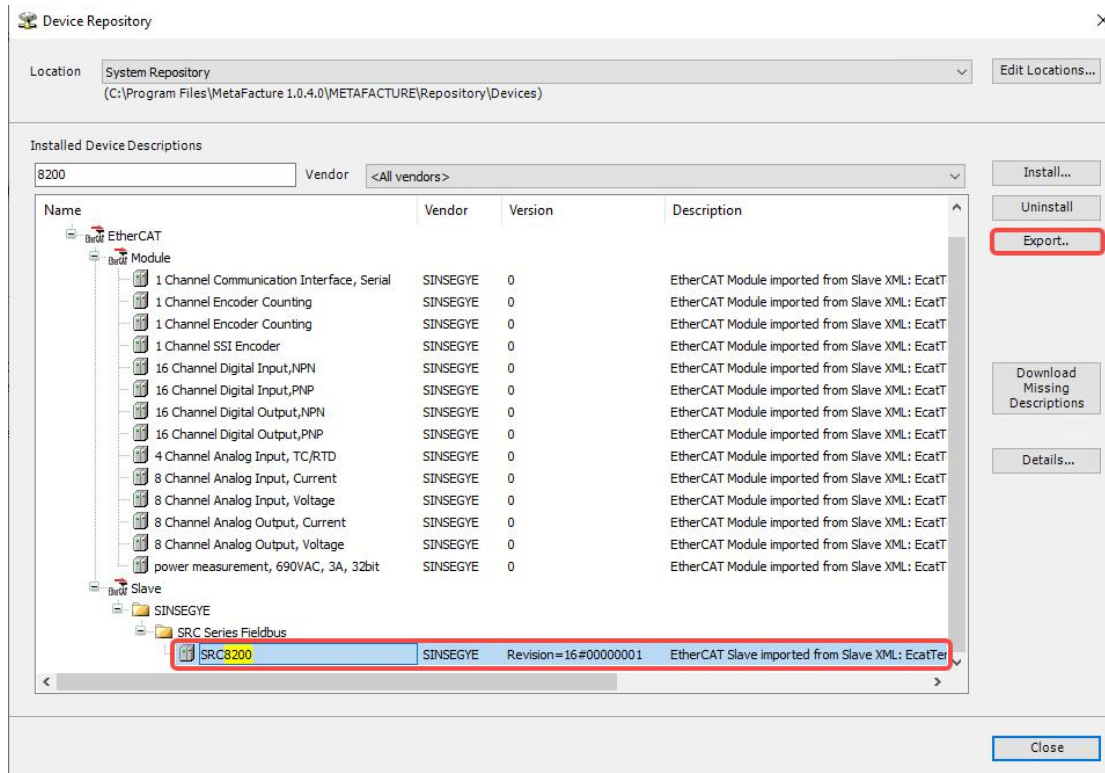
## Section 2: Uninstalling the Device

1. Click [Tools] - [Device Repository ...] in the menu bar to open the device repository.
2. Select the device you want to uninstall, click [Uninstall], and select [Yes] in the pop-up confirmation box. The device will be deleted.

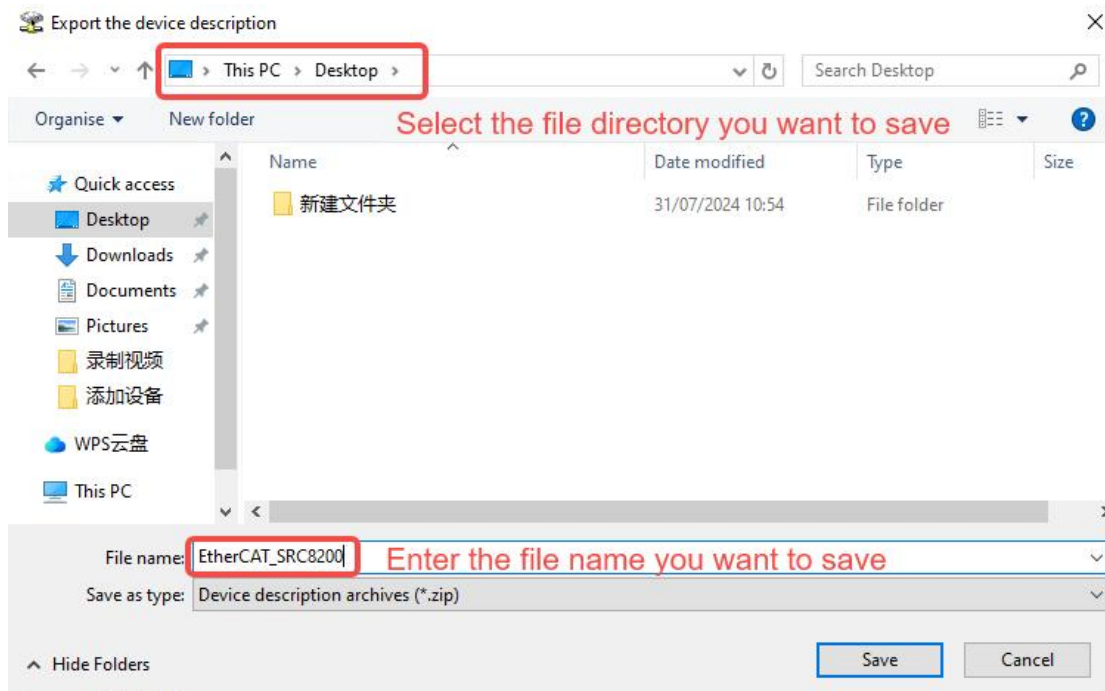


## Section 3: Exporting Devices

1. Click [Tools] > [Device Repository ...] in the menu bar to open the device repository.
2. Select the device you want to export and click [Export].



3. Enter the file name and the location to save the file, and click [Save] to complete. The exported file is a compressed package, which can be obtained by decompressing it.

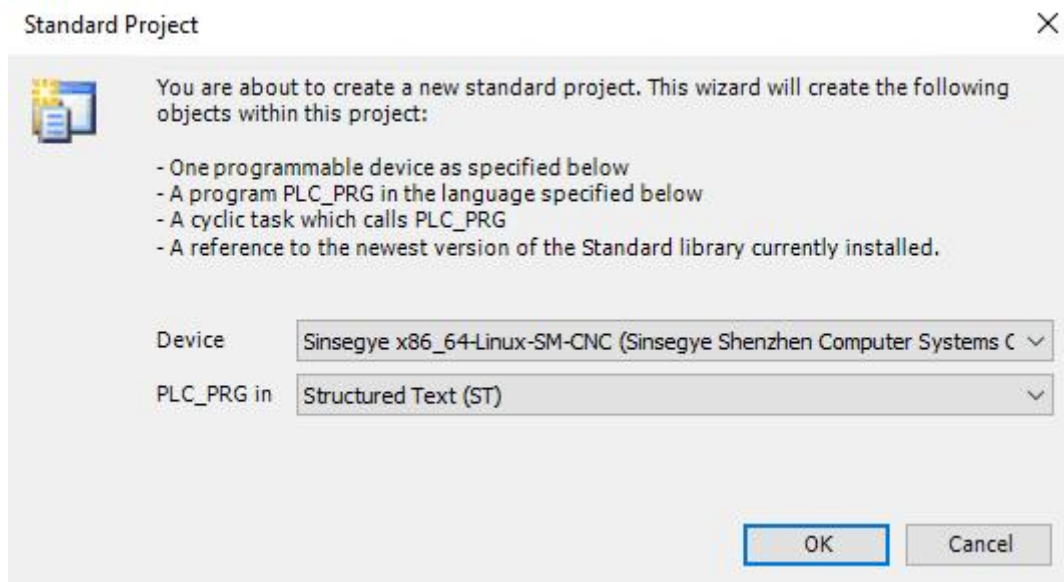


## Chapter 6: Connecting to PLC

This example uses the connection of the SX5064 IIoT machine in MetaFactory as an example to introduce how to connect a PLC in MetaFactory. When you need to connect other models of IIoT machines or third-party PLCs, you can refer to this example.

### Section 1: All machines are connected to the Internet

1. Add PLC device description file, refer to [Add Device](#)
2. [Create a new standard project](#), select the newly installed IIoT device in the [Device] drop-down list, and click [OK].



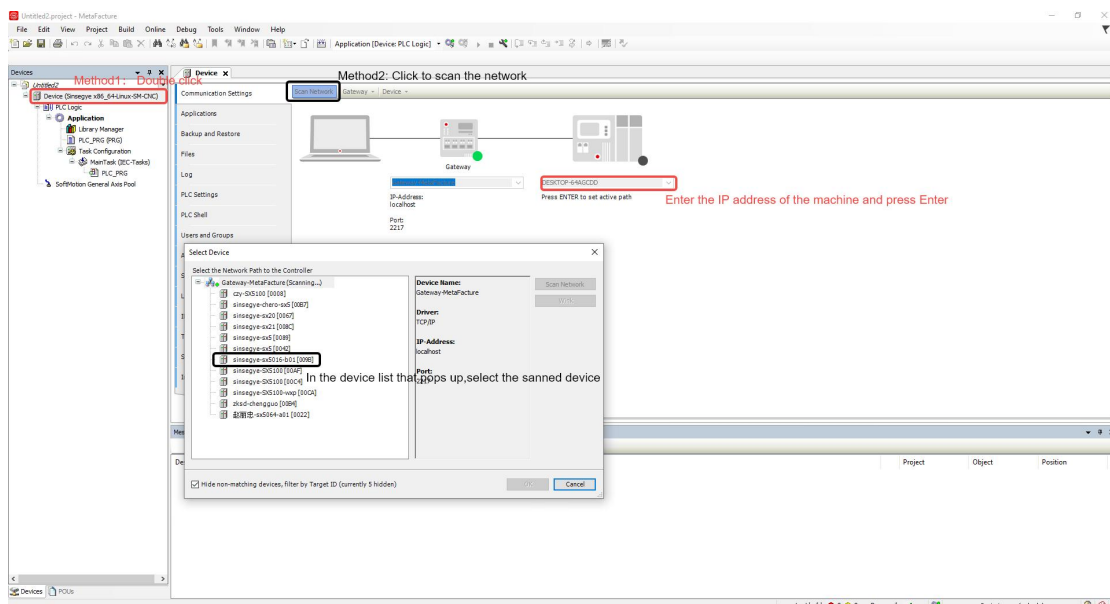
3. Confirm that the IIoT machine is connected to the network and is in the same network segment as the computer where MetaFactory is installed.



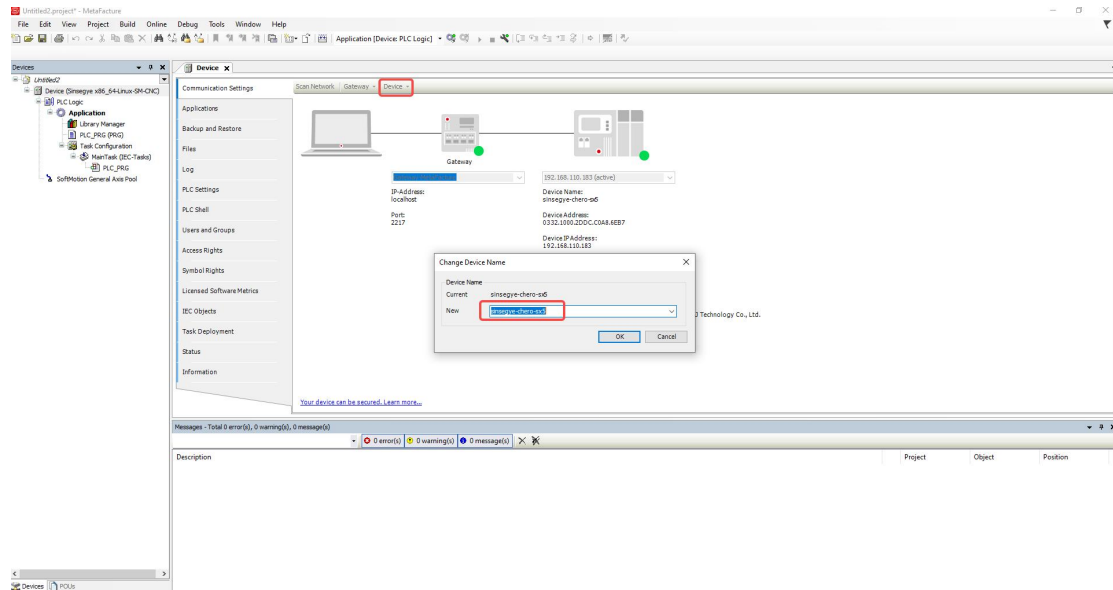
4. In MetaFacture , double-click [ Device ] in the device window. On the Device page that opens

method 1 : Enter the IP address of the PLC and press Enter

Method 2 : Click [Scan Network] and select the corresponding device in the pop-up scan results



5. (Optional) After the PLC is successfully connected, you can rename the device to facilitate future device scanning. Click [Device] > [Rename active device], enter a custom device name, and click [OK].

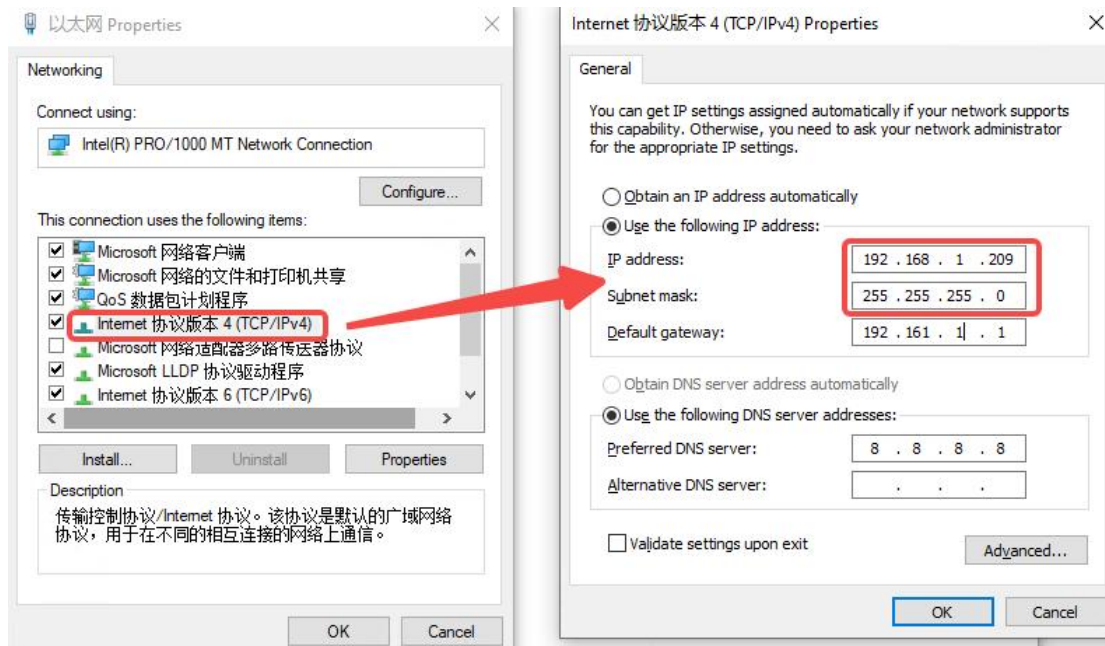


## Section 2: The IIoT device is not connected to the Internet

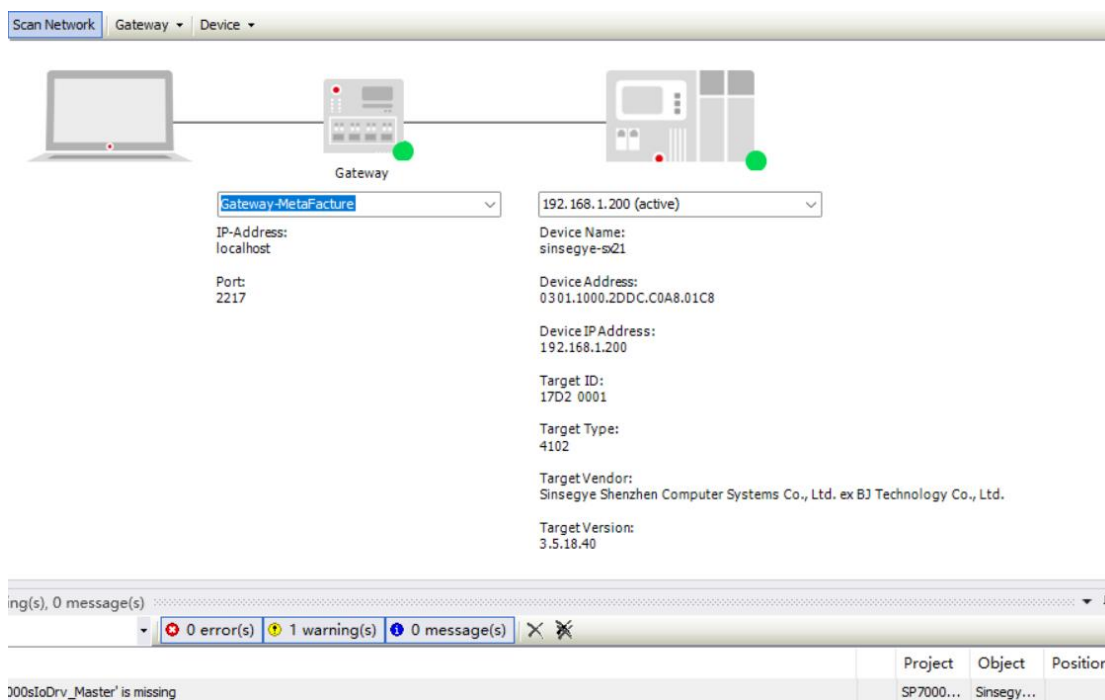
1. connect the IIoT device to the computer where MetaFactory is installed.



2. Set the computer Ethernet IP address and the IIoT machine eth0 IP ( Lan 1 port, IIoT machine default 192.168.1.200) in the same network segment



3. Open the [Device] page, click [Scan Network] to scan out the device or enter the IP address of the IIoT device 192.168.1.200, and press Enter.





## Chapter 7: Connecting MetaFacture PLC Simulator

Connect MetaFacture 's own PLC simulator ( MetaFacture xx Win V3 xx ) to debug the project code logic without connecting to the PLC

### Software and hardware resources

Hardware: 64-bit Windows computer

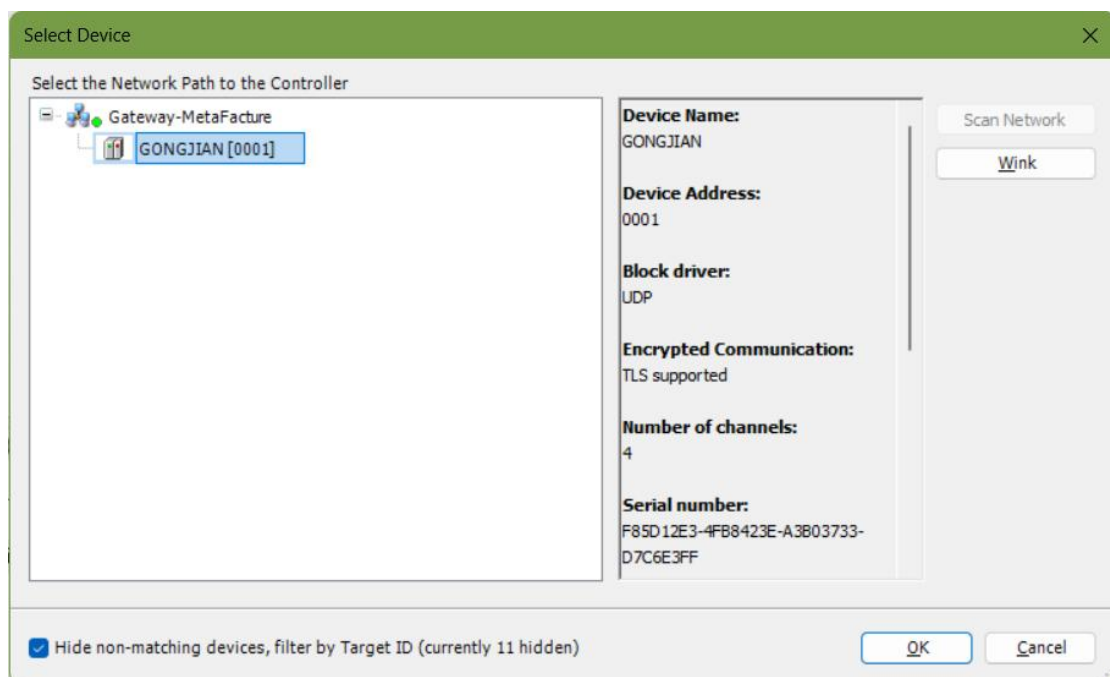
Software: MetaFacture

### Section 1: Operational steps

1. [Create a new standard project](#) , select [ MetaFacture Control Win V3 x64 ] in [Device] , and select MetaFacture Control Win V3 for 32-bit operating system.

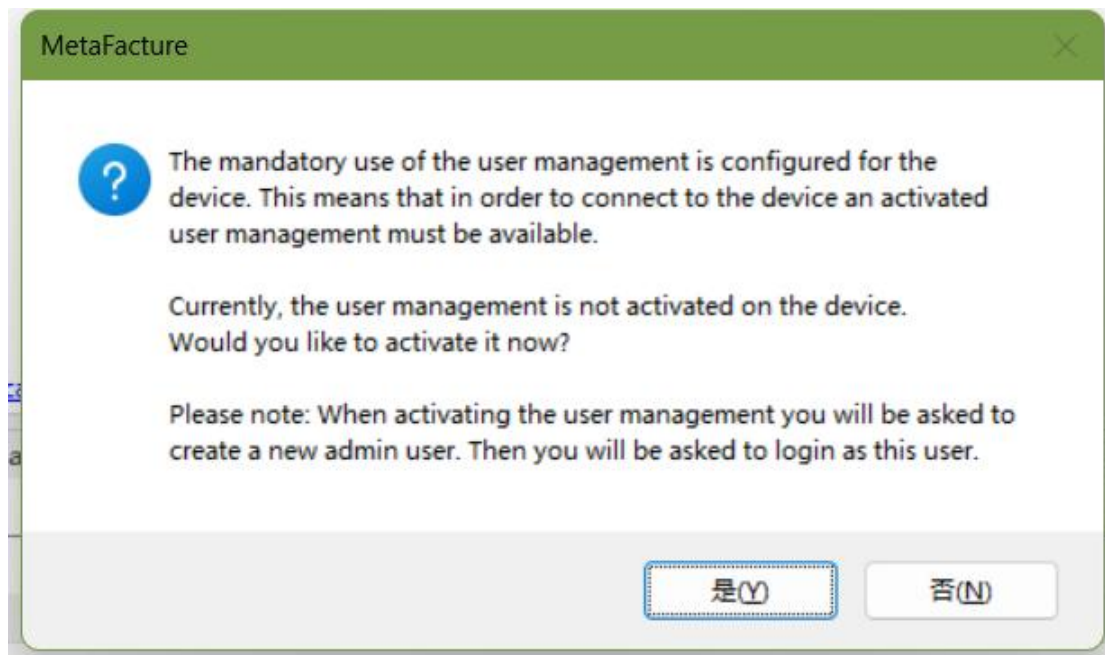
If it is a saved project, you can right-click [Device] and select [Update Device]. In the pop-up dialog box, select [ MetaFacture Control Win V3 x64 ], click the [Update Device] button, and after the update is complete, click [Close].

2. Double-click to open the [Device] page, click [Scan Network] to scan to the computer, select the computer, and click [OK].

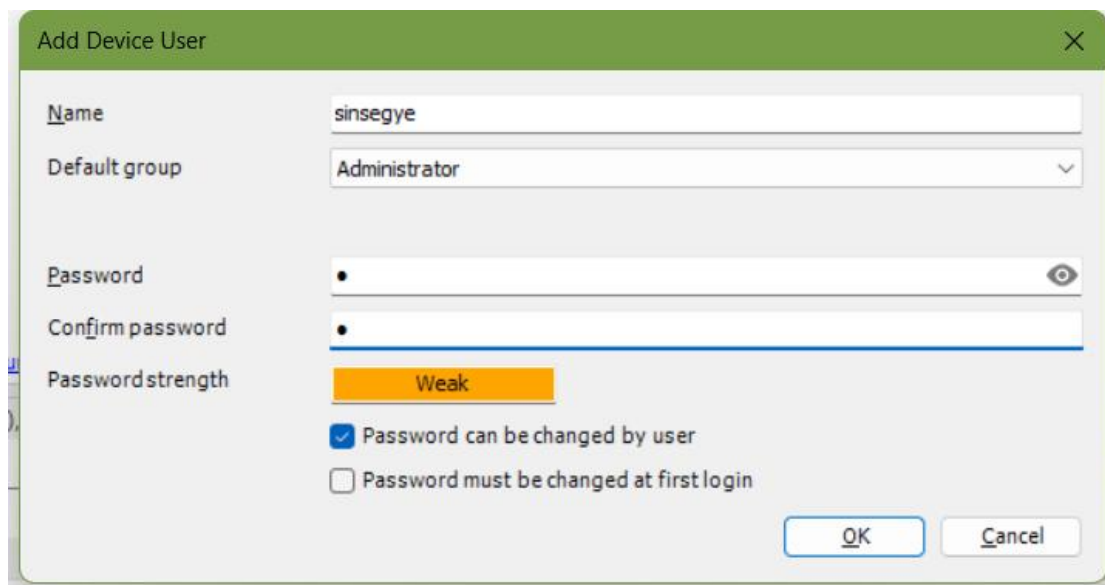


3. In the pop-up dialog box, select [Yes]

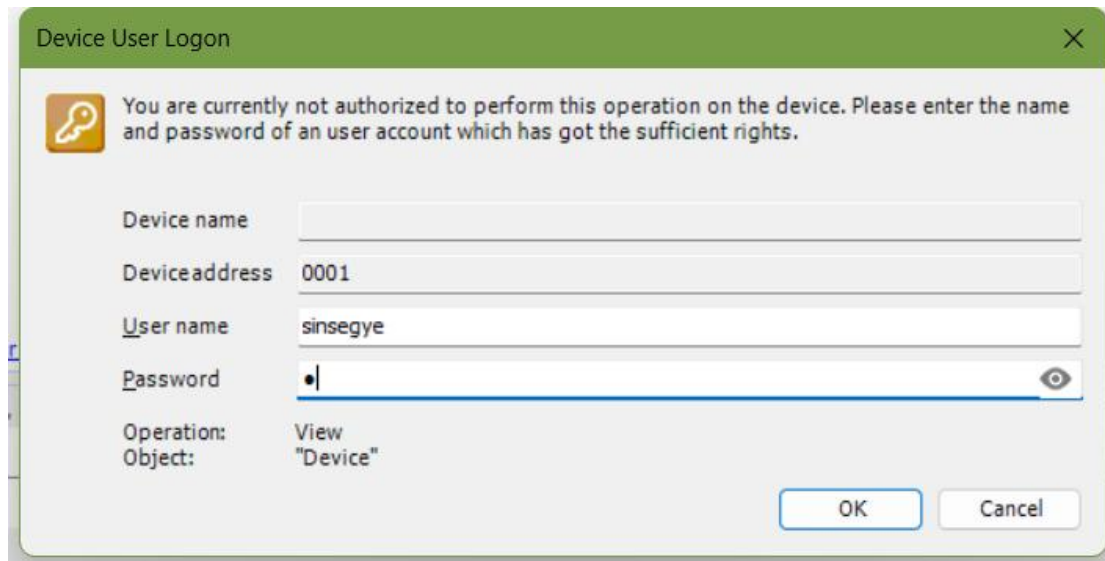




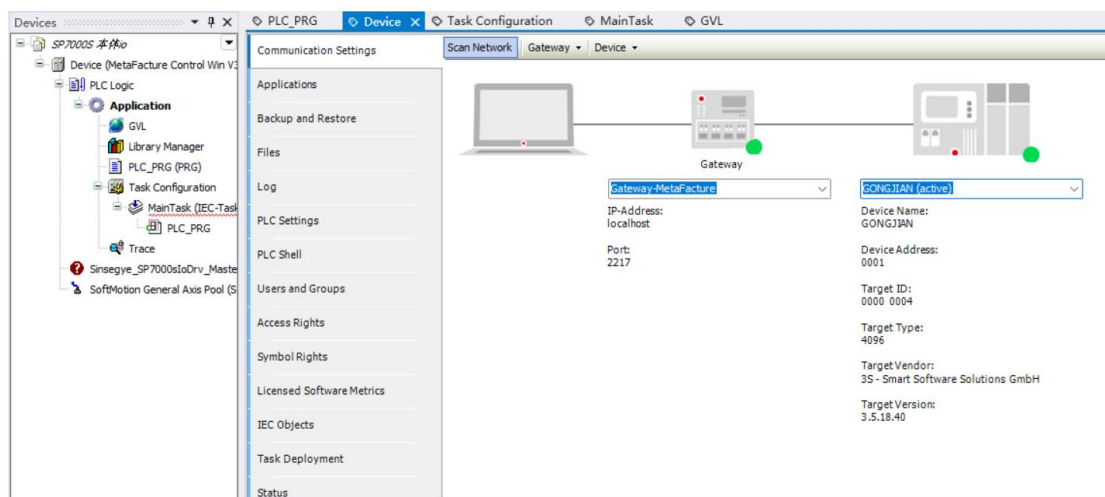
4. The first connection requires adding a device user and setting a username and password



5. You need to log in twice for the first login , enter the username and password you just set, and click [OK]



6. If the status turns green, it means the connection is successful and you can write code and run debugging .



## Section 2: How to solve the problem of not being able to scan the device

If the device is not found during the scan in step 2, the MetaFactory Control Win service may be stopped. Search services.msi in the computer's Start menu to open the Windows System Services window and check if the MetaFactory Control Win service is running. If it is not running, right-click to start the service. After the service is started, return to MetaFactory and scan again.

Services

**MetaFacture Control Win**

Start the service

Description:  
Windows soft realtime runtime system based on a Windows service that is running with REALTIME process priority in user mode.

Name	Description	Status	Startup Type	Log On As
IP Translation Configuration Service	Configures and ena...		Manual (Trigger Start)	Local System
IPsec Policy Agent	Internet Protocol sec...	Running	Manual (Trigger Start)	Network Se...
KtmRm for Distributed Transaction Coordinator	Coordinates transac...		Manual (Trigger Start)	Network Se...
Language Experience Service	Provides infrastruc...		Manual	Local System
Link-Layer Topology Discovery Mapper	Creates a Network ...		Manual	Local Service
Local Profile Assistant Service	This service provide...		Manual (Trigger Start)	Local Service
Local Session Manager	Core Windows Servi...	Running	Automatic	Local System
McpManagementService	<Failed to Read Des...			Local System
MessagingService_9883f4a	Service supporting t...		Manual (Trigger Start)	Local System
<b>MetaFacture Control Win</b>	Windows soft realti...		Automatic	Local System
MetaFacture Gateway	Gateway Server as a ...	Running	Automatic	Local System
MetaFacture ServiceControl	Service for starting/st...	Running	Automatic	Local System
Microsoft (R) Diagnostics Hub Sta...	Diagnostics Hub Sta...		Manual	Local System
Microsoft Account Sign-in Assista...	User sign-in...		Manual (Trigger Start)	Local System
Microsoft App-V Client	App-V use...		Disabled	Local System
Microsoft Cloud Identity Service	Integration...		Manual	Network Se...
Microsoft Defender Antivirus Net...	Network protection against...	Running	Manual	Local Service
Microsoft Defender Antivirus Ser...	Protect users f...	Running	Automatic	Local System
Microsoft Defender Core Service	Core service for the availa...	Running	Automatic	Local System
Microsoft Edge Elevation Service	Microsoft Edge ...		Manual	Local System
Microsoft Edge Update Service (e...	Microsoft ...		Automatic (Delayed Sta...	Local System
Microsoft Edge Update Service (e...	Microsoft ...		Manual (Trigger Start)	Local System
Microsoft iSCSI Initiator Service	Manages Internet S...		Manual	Local System
Microsoft Keyboard Filter	Controls keystroke f...		Disabled	Local System
Microsoft Passport	Provides process iso...		Manual (Trigger Start)	Local System
Microsoft Passport Container	Manages local user i...		Manual (Trigger Start)	Local Service
Microsoft Software Shadow Copy Provider	Manages software-...		Manual	Local System
Microsoft Storage Spaces SMP	Host service for the ...		Manual	Network Se...
Microsoft Store Install Service	Provides infrastruc...	Running	Manual	Local System
Microsoft Windows SMS Router Service	Routes messages ba...		Manual (Trigger Start)	Local Service
Natural Authentication	Signal aggregator s...		Manual (Trigger Start)	Local System
Net.Tcp Port Sharing Service	Provides ability to s...		Disabled	Local Service
Netlogon	Maintains a secure c...		Manual	Local System
Network Connected Devices Auto-Setup	Network Connected ...		Manual (Trigger Start)	Local Service

Context menu for MetaFacture Control Win:

- Start
- Stop
- Pause
- Resume
- Restart
- All Tasks
- Refresh
- Properties
- Help

Name	Description	Status	Startup Type	Log On As
MetaFacture Control Win	Windows soft realtim...	正在运行	自动	本地系统
MetaFacture Gateway	Gateway Server as a ...	正在运行	自动	本地系统
MetaFacture ServiceControl	Service for starting/st...	正在运行	自动	本地系统

## Chapter 8: Downloading and Uploading Projects

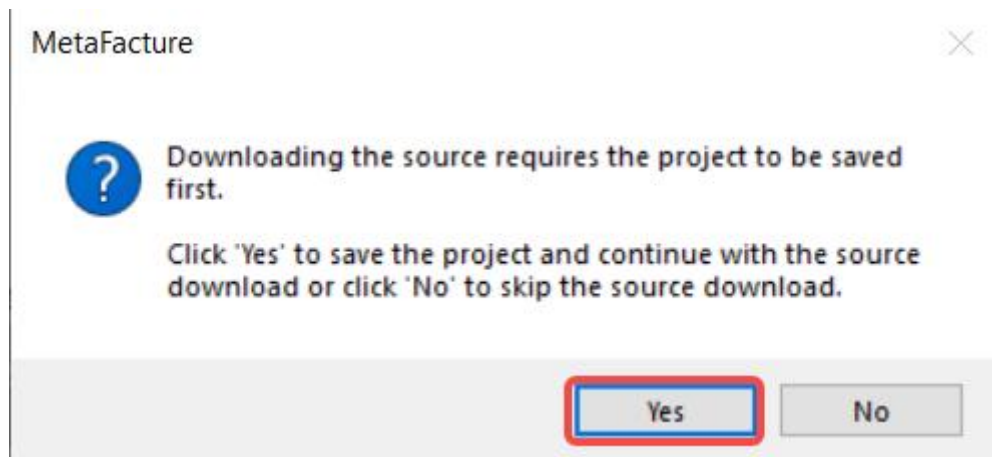
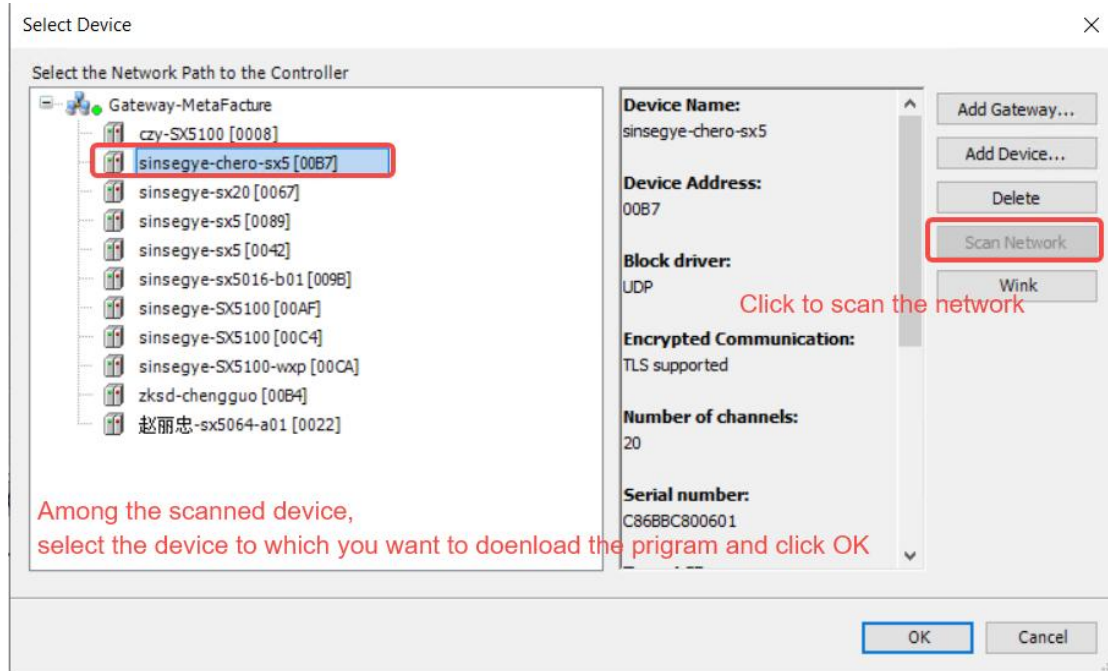
This example demonstrates downloading a project from MetaFactory to a PLC, and then uploading the program from the PLC to MetaFactory on another computer.

### System construction diagram



### Section 1: Downloading the project to the PLC

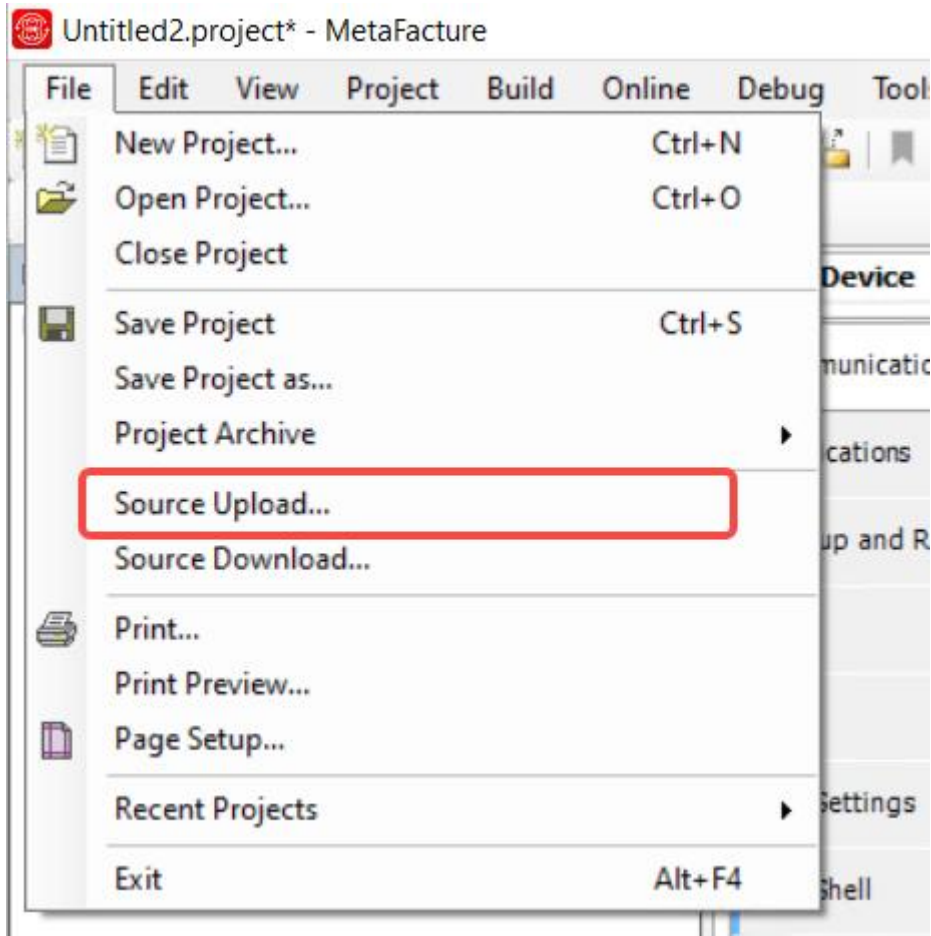
1. MetaFactory in 192.168.110.37, [create a new standard project](#), and select "Sinsegye ..." as the device.
2. [Connect to PLC](#)
3. Click [File] in the menu bar — [Source code download]
4. Selecting a PLC



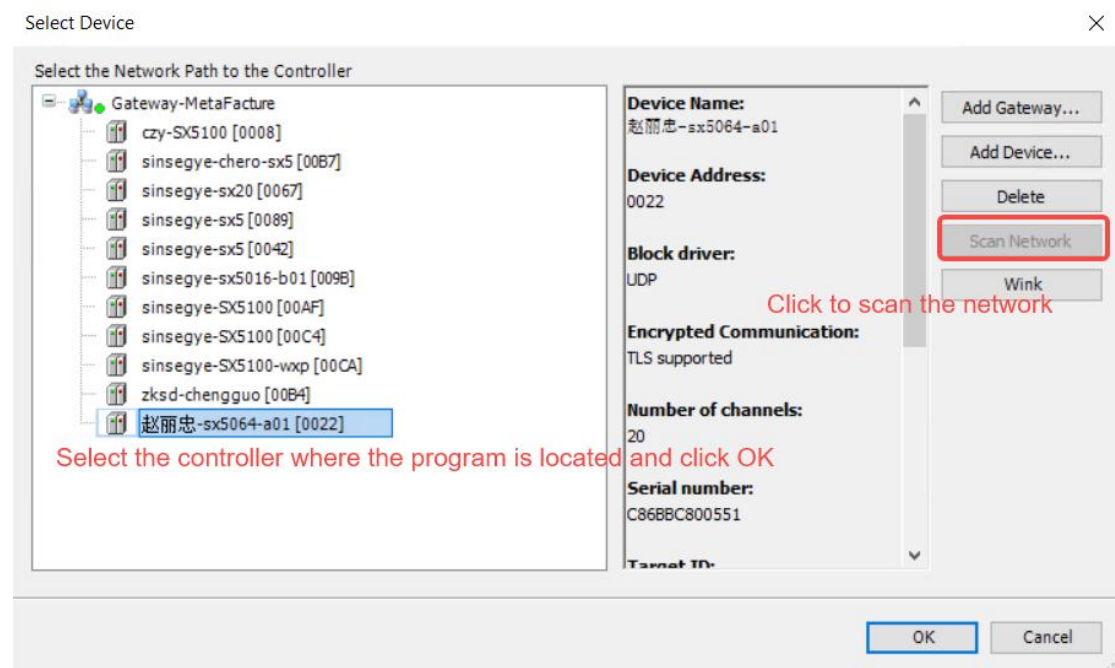
5. Menu bar: File - Close project

## Section 2: Upload the project from PLC to MetaFacture

1. MetaFacture in 192.168.110.11
2. In the menu bar, click [File] - [Source Code Upload]

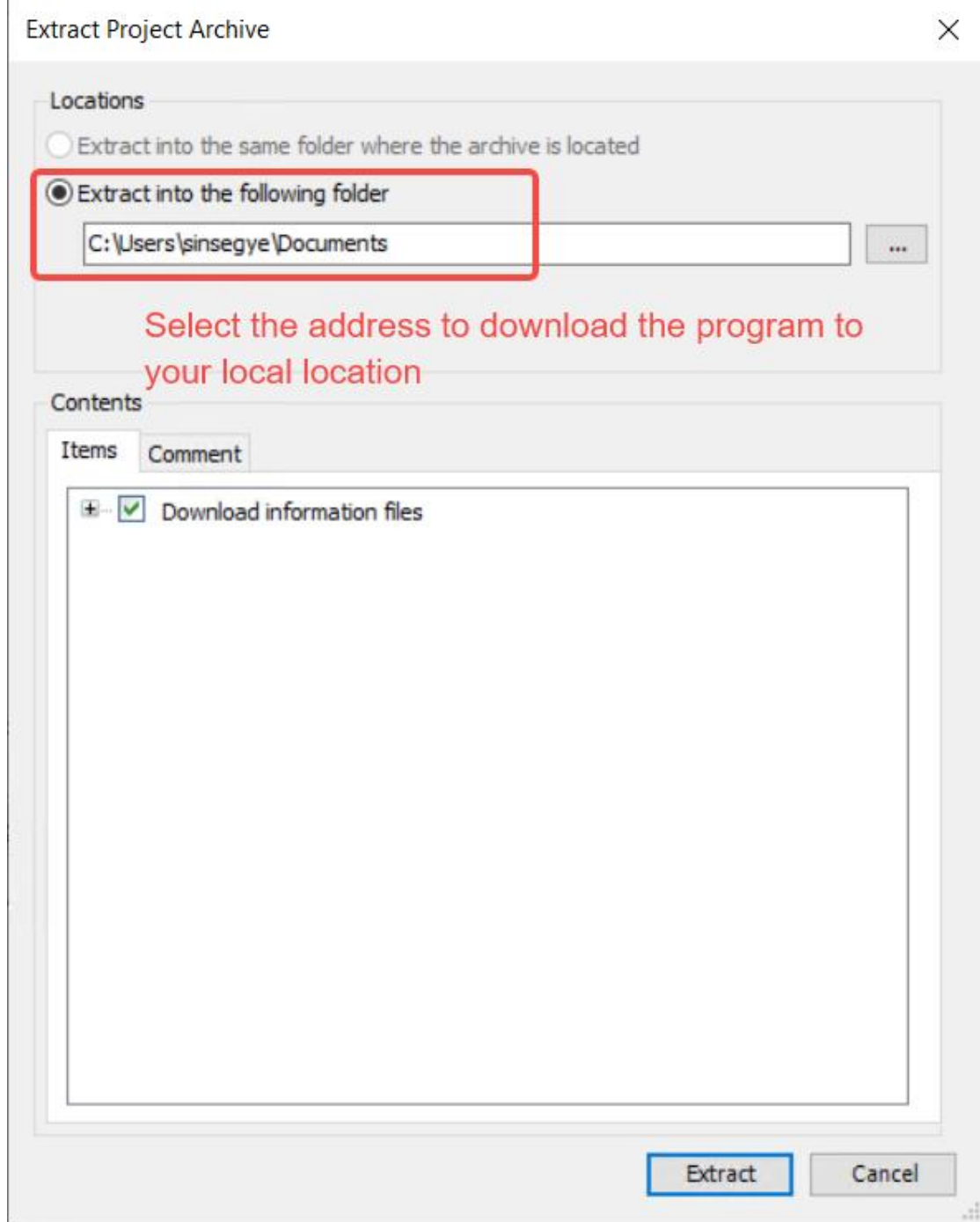


3. the PLC to upload the project from the scanned devices.

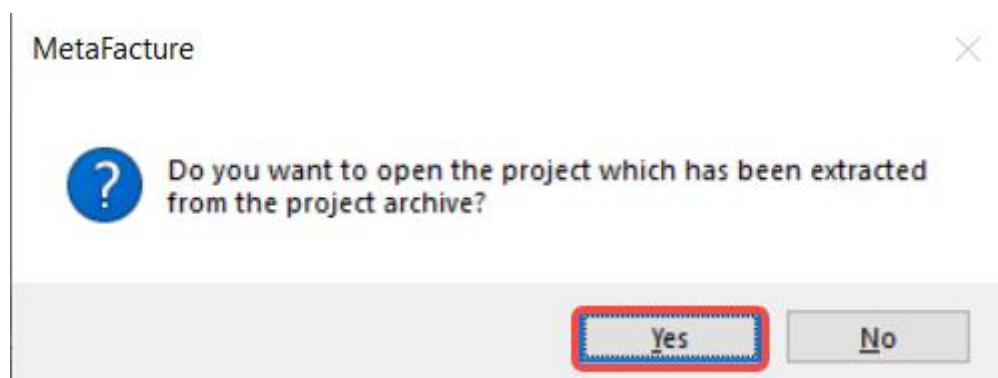


4. Specify the location where the program is placed locally

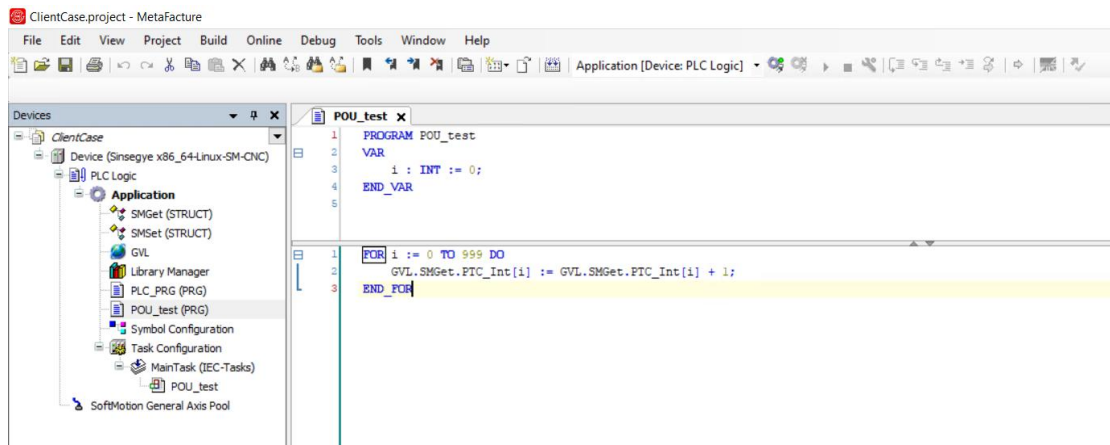




5. Select Open File



6. The file is uploaded from the controller to the local computer and opened in MetaFacture . If you encounter problems during the opening process, please refer to [Opening a Project](#)



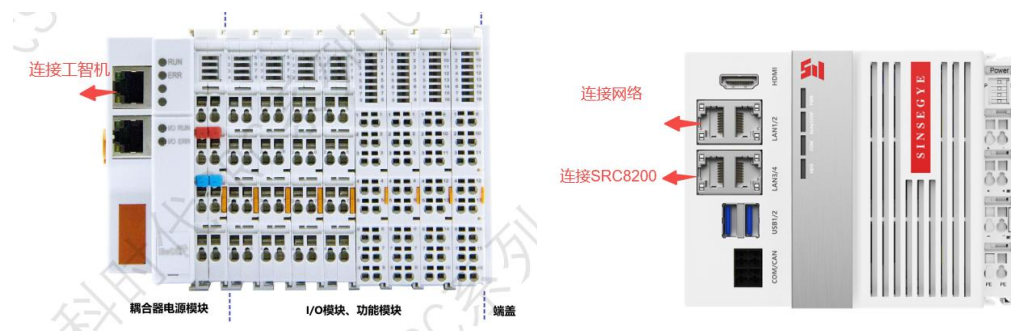


## Chapter 9: Scanning Devices

This example takes scanning and connecting the SRC8200 EtherCAT IO module in MetaFacture as an example to demonstrate how to scan devices in MetaFacture . When you want to scan third-party devices, you can refer to this case.

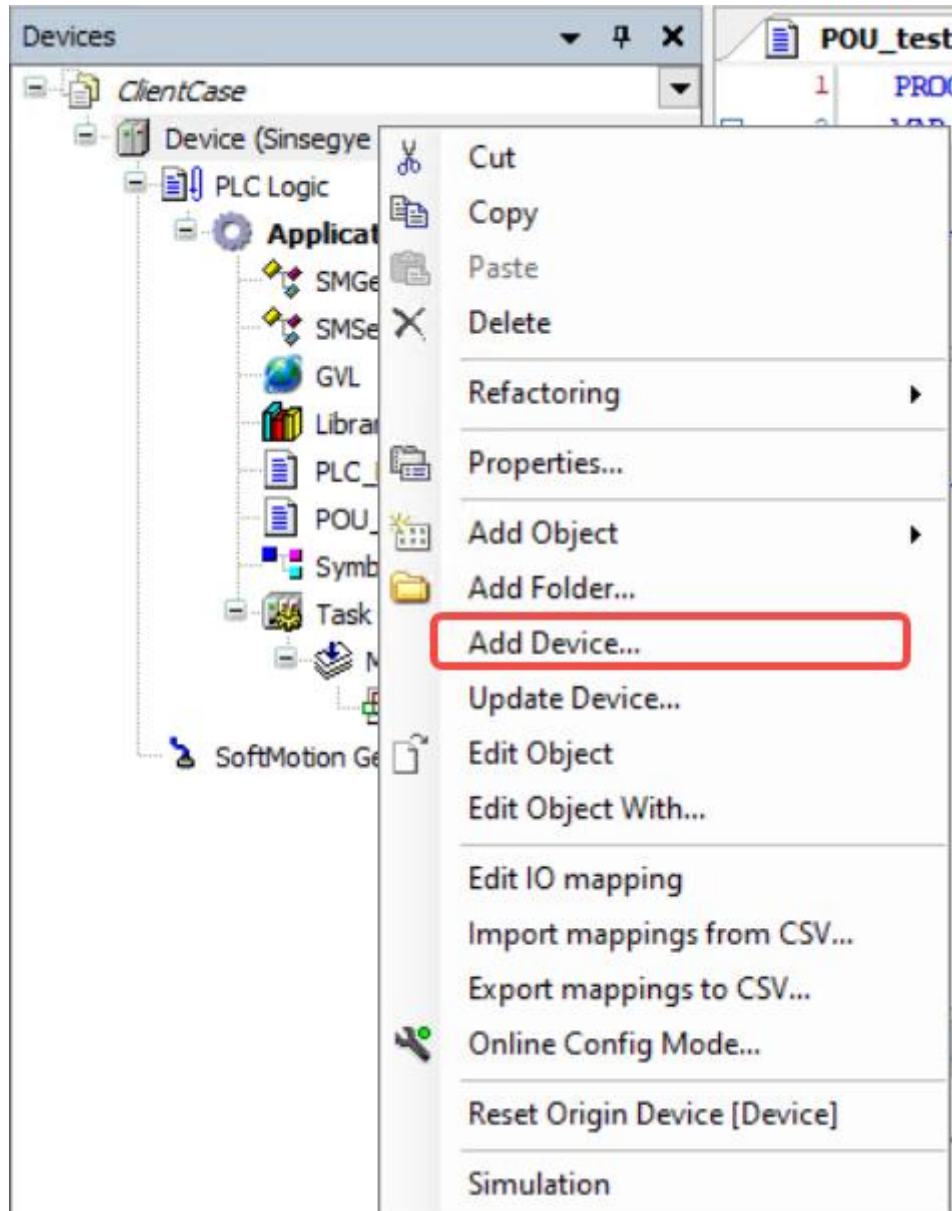
### System construction diagram

Connect PLC and SRC8200 with a network cable

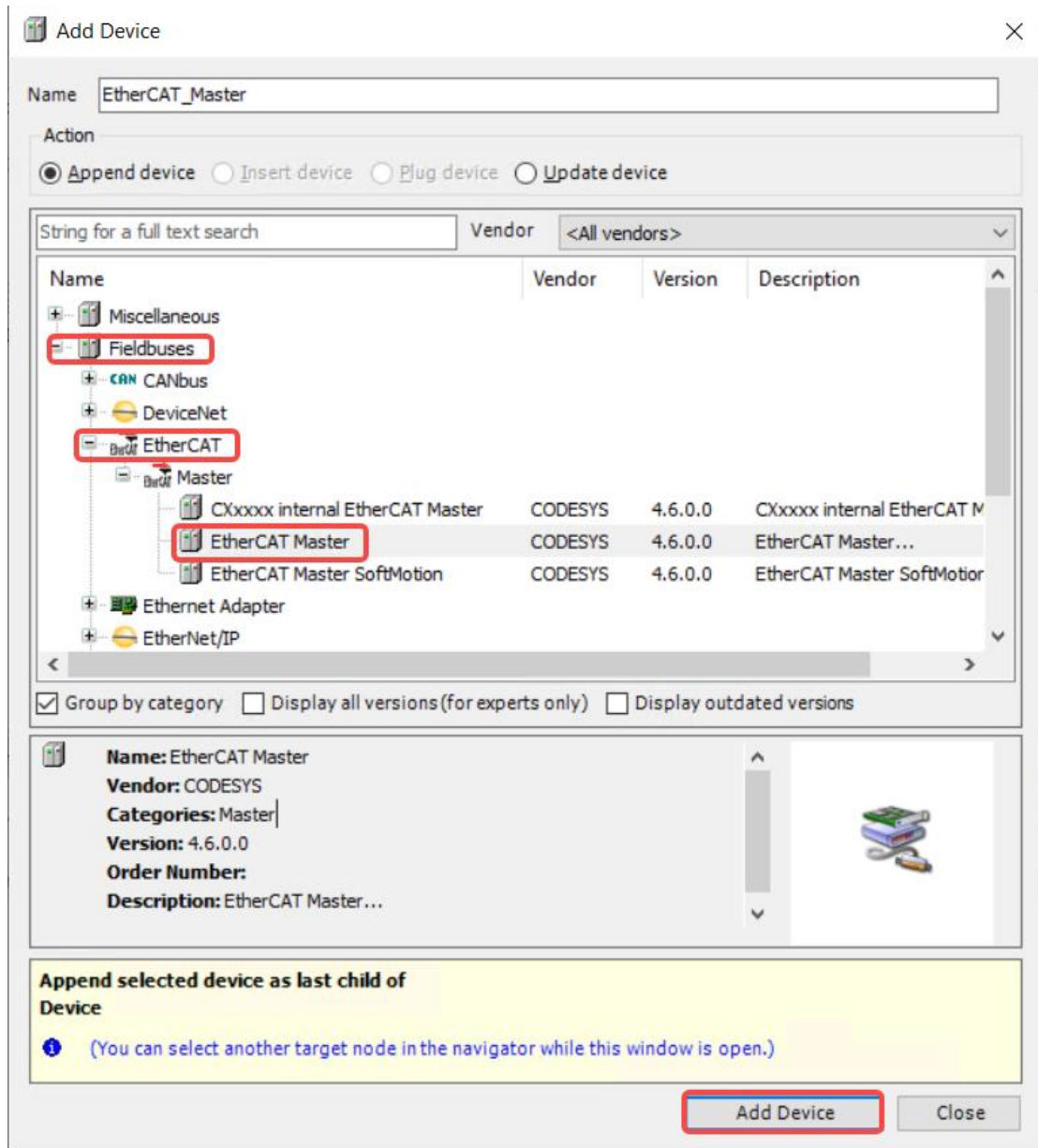


### Section 1: Adding a Terminus

1. [Connect to PLC](#)
2. Install the SRC8200 IO module device description file, refer to [Add Device](#)
3. Device ] in the device window , right-click and select [Add Device]

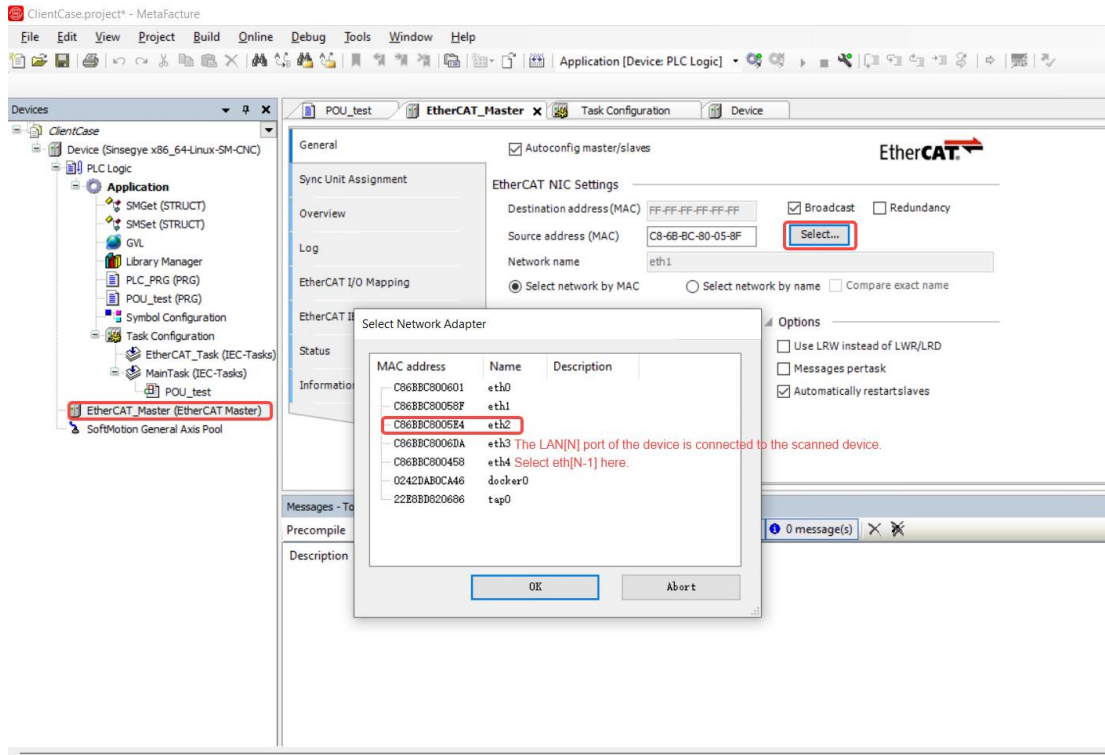


4. EtherCAT communication protocol is used , so select the EtherCAT master station:  
[Fieldbus] - [ EtherCAT ] - [ EtherCAT Master ], click [Add Device], and click [Close].

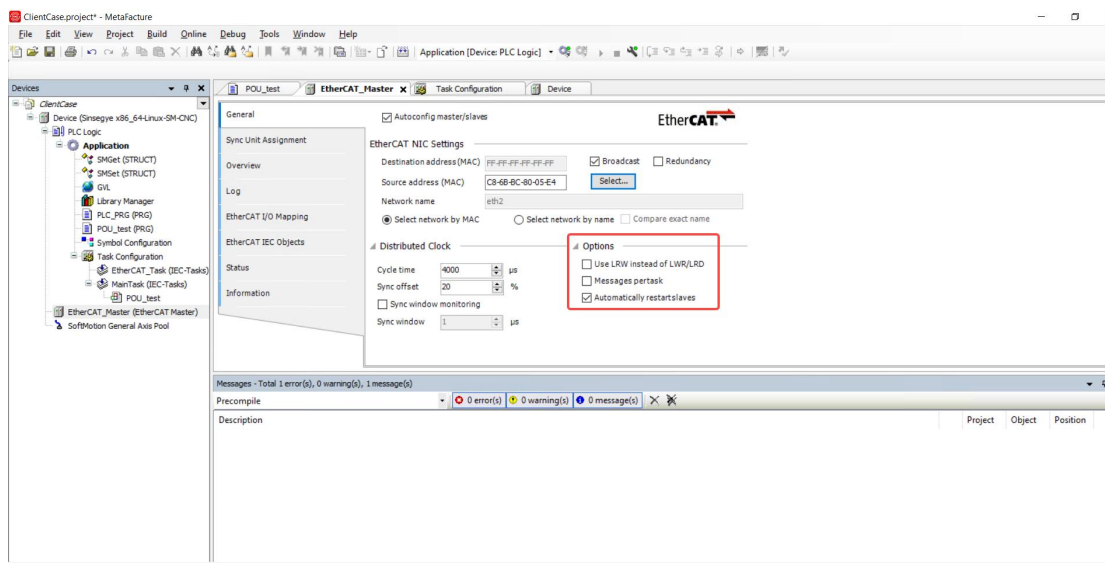


##### 5. Configure the main station

Set the scanning address. In step 1, SRC8200 is connected to the Lan3 network port, so select eth2 (eth serial number starts from 0, so it is 1 less than the Lan serial number)

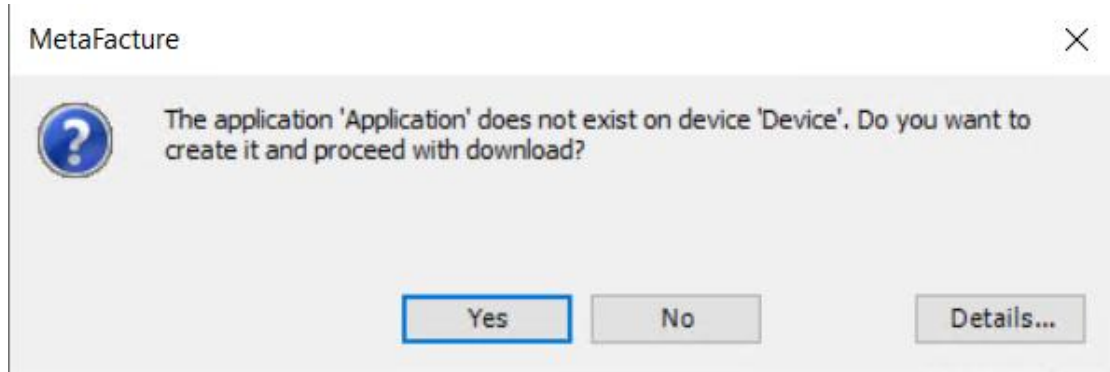


Expand [Options] and check [Automatically restart slaves] .

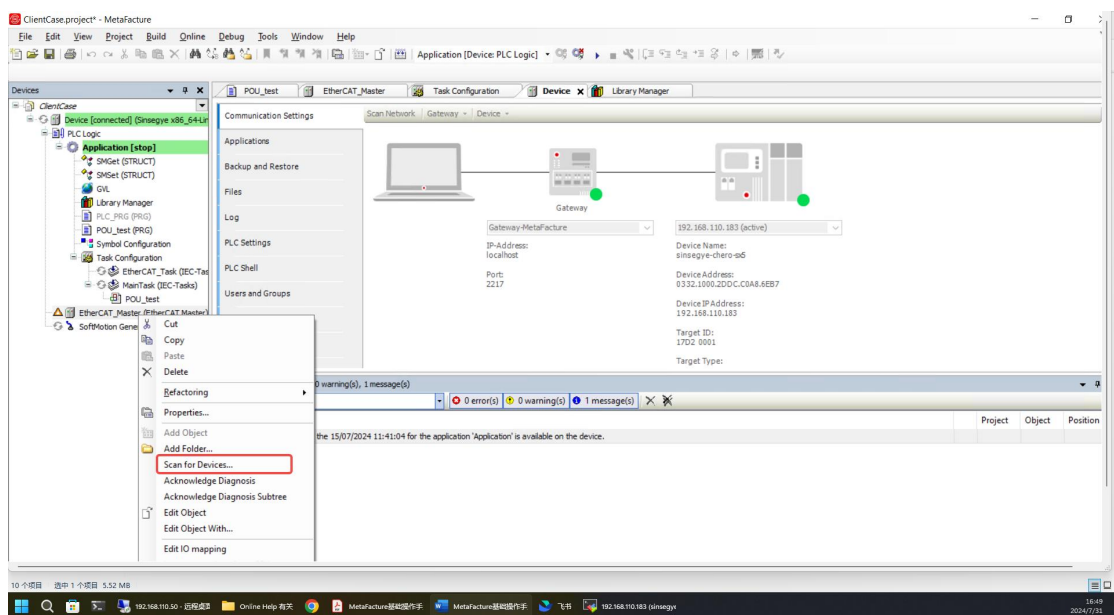


## Section 2: Scanning Slaves

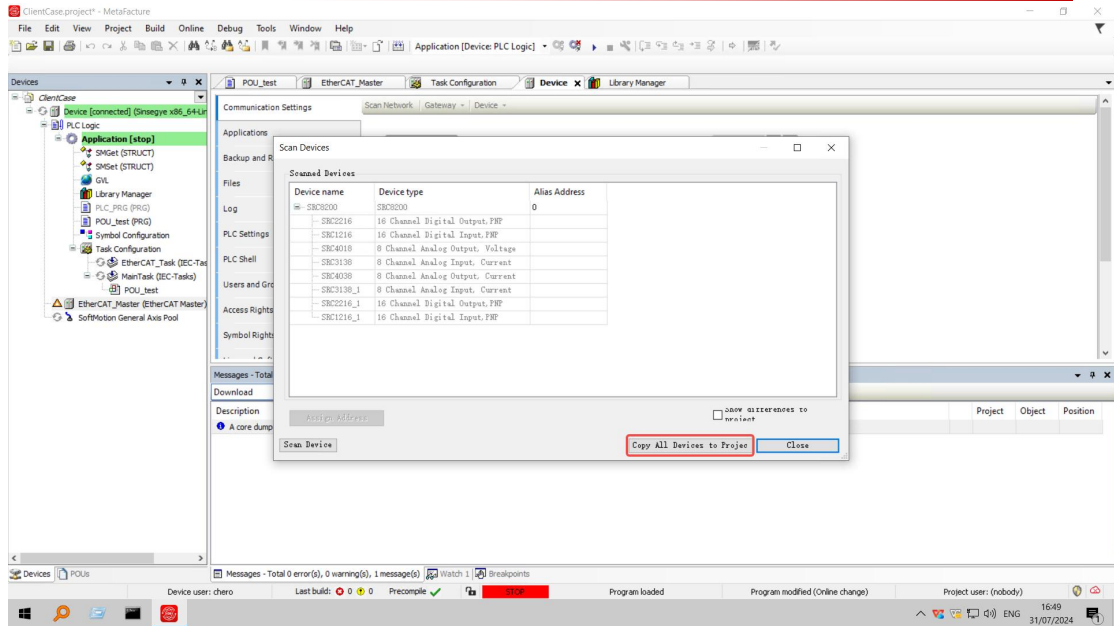
1. Click the [Login] button on the toolbar to log in to the PLC. If the following message appears, click [Yes]



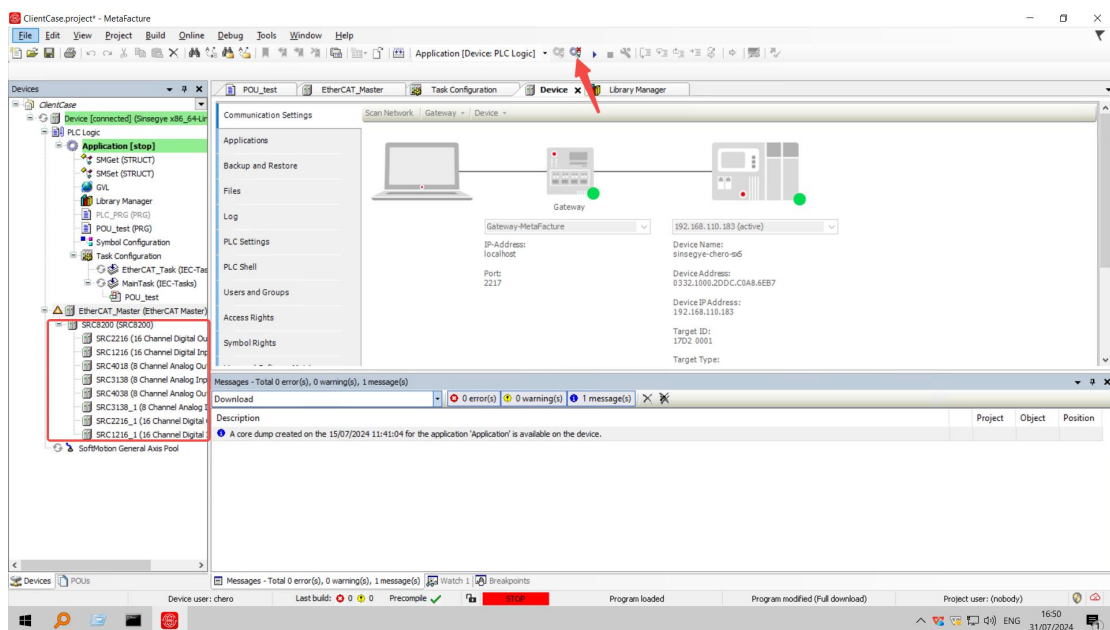
2. In the device window, select the master station [ EtherCAT Master ], right-click and select [Scan Devices]



3. If the above configurations are correct, you can see the scanned devices on the Scan Devices page. The models and order are consistent with the models and order of the actually connected physical devices. After confirmation, click [Copy all devices to project] (If no scanned content is displayed, or the scanned content is incorrect, please click [Scan Devices] in the lower left corner to try again)



4. Click the [Exit] icon on the toolbar and the IO module will be added to the device tree.



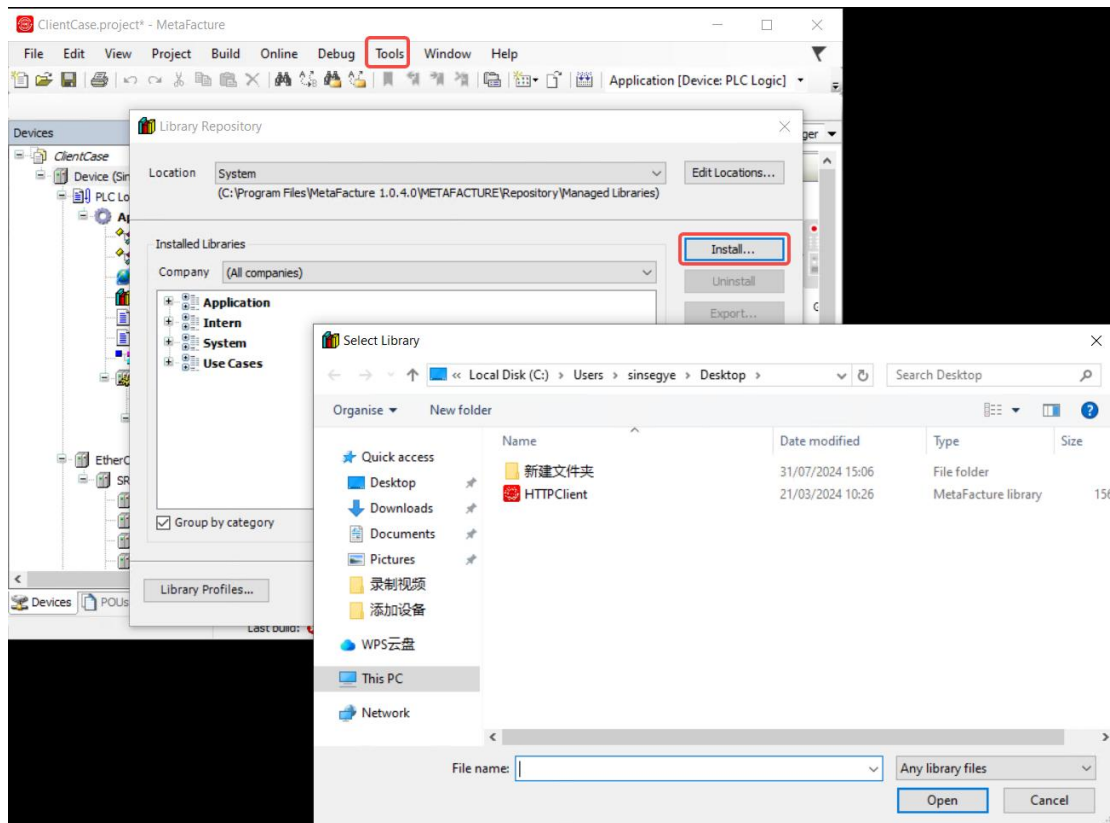
## Chapter 10: Installing and Using Libraries

This example takes the HTTPClient library as an example to demonstrate how to install, uninstall, export, and use the installed library in MetaFacture

When you need to operate a third-party library in MetaFacture , you can refer to this example.

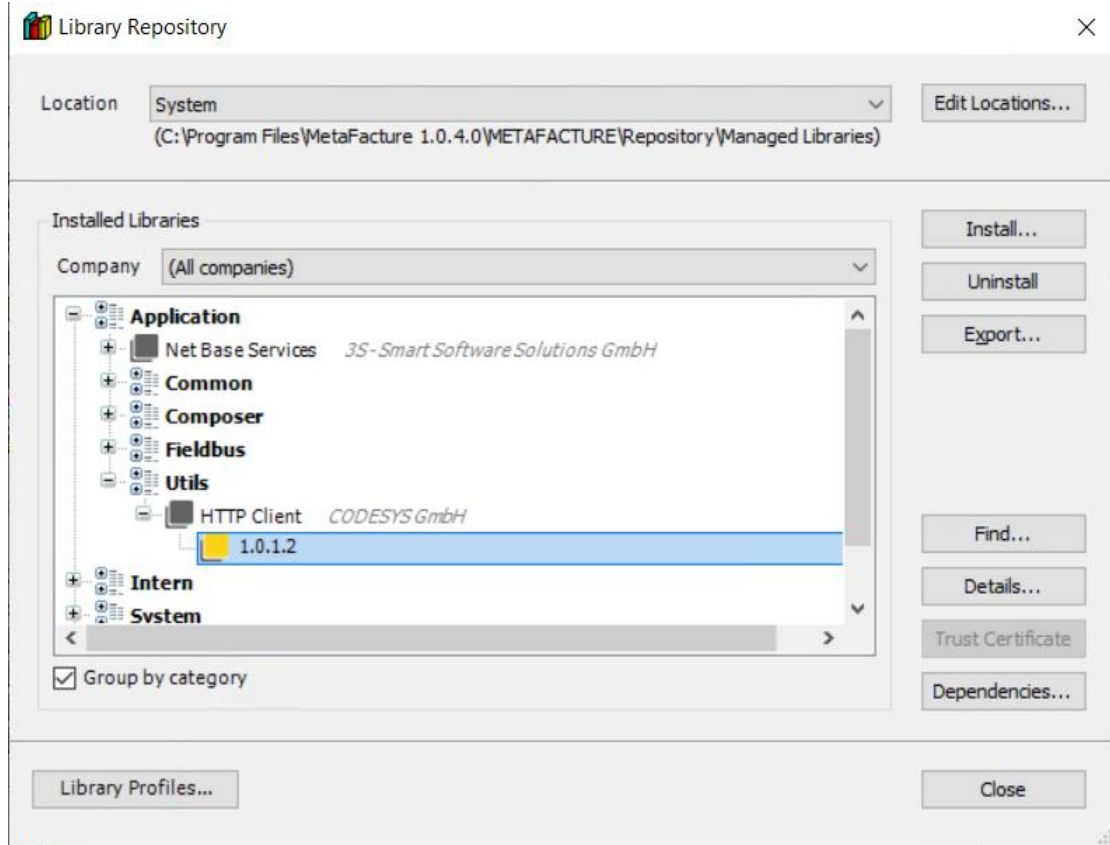
### Section 1: Installing the Library

1. xxxx.library ) you want to install to your local computer
2. In MetaFacture , click [Tools] - [Library Storage ... ] in the menu bar.
3. Click [Install], select the downloaded library file, and click [Open]



4. Installation complete, close the dialog box

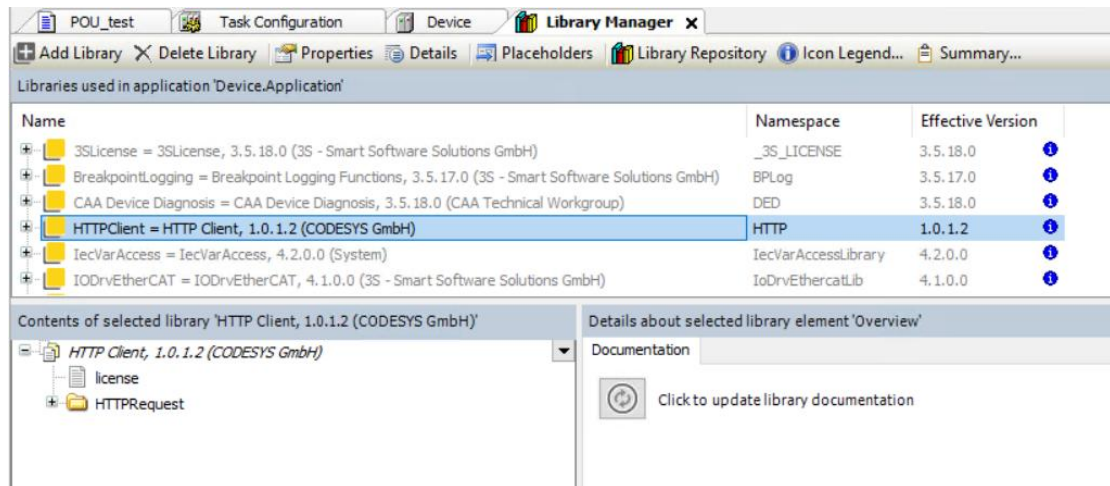
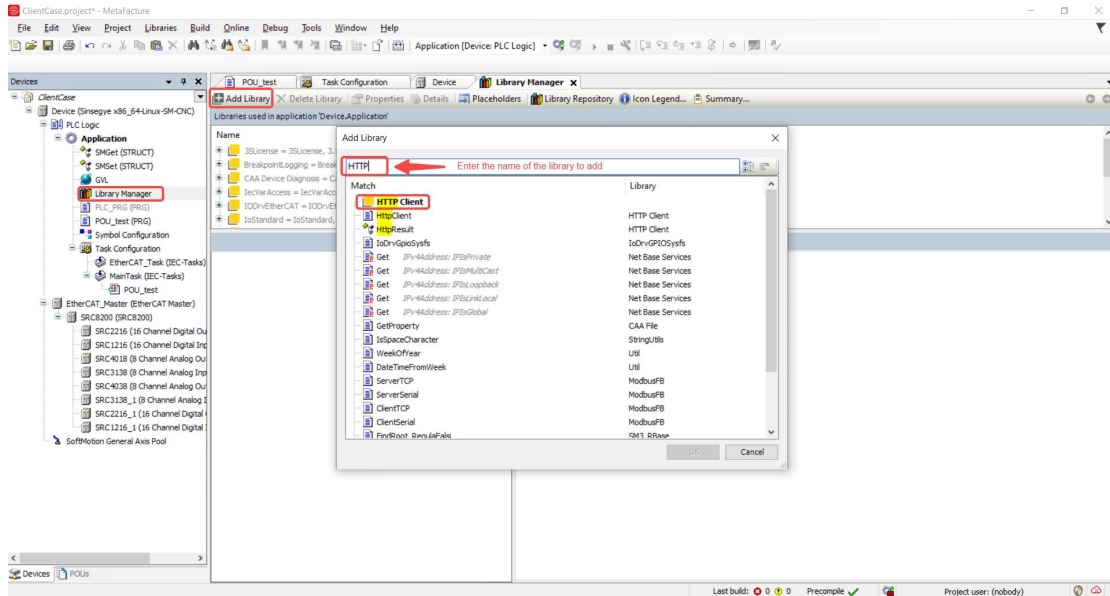




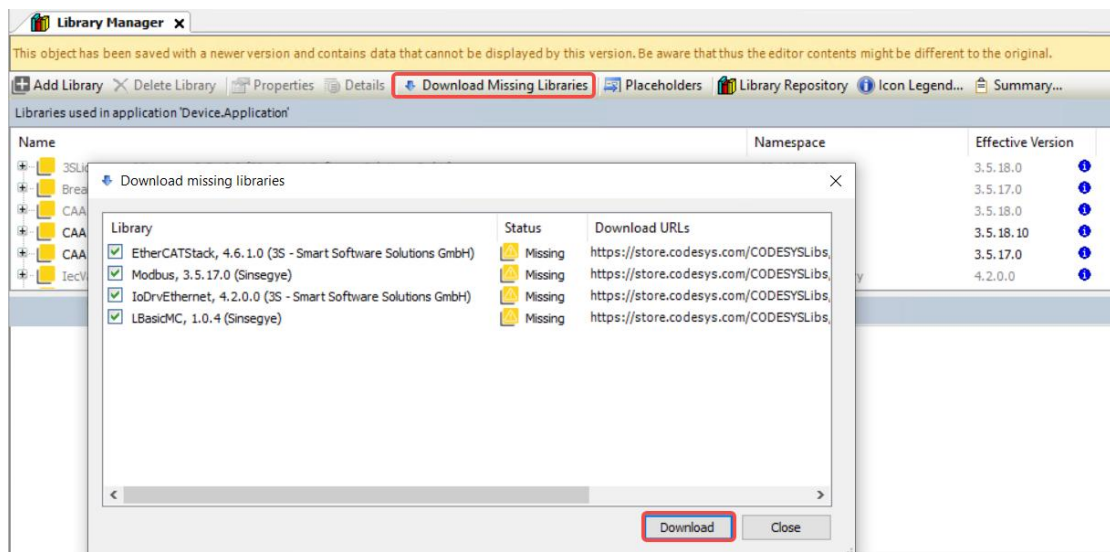
## Section 2: Using the library in your project

1. [Create a new standard project](#)
2. In the device window, double-click [Library Manager]
3. Click [Add Library], enter the name of the library you want to add, select the library you want to add, and click [OK]

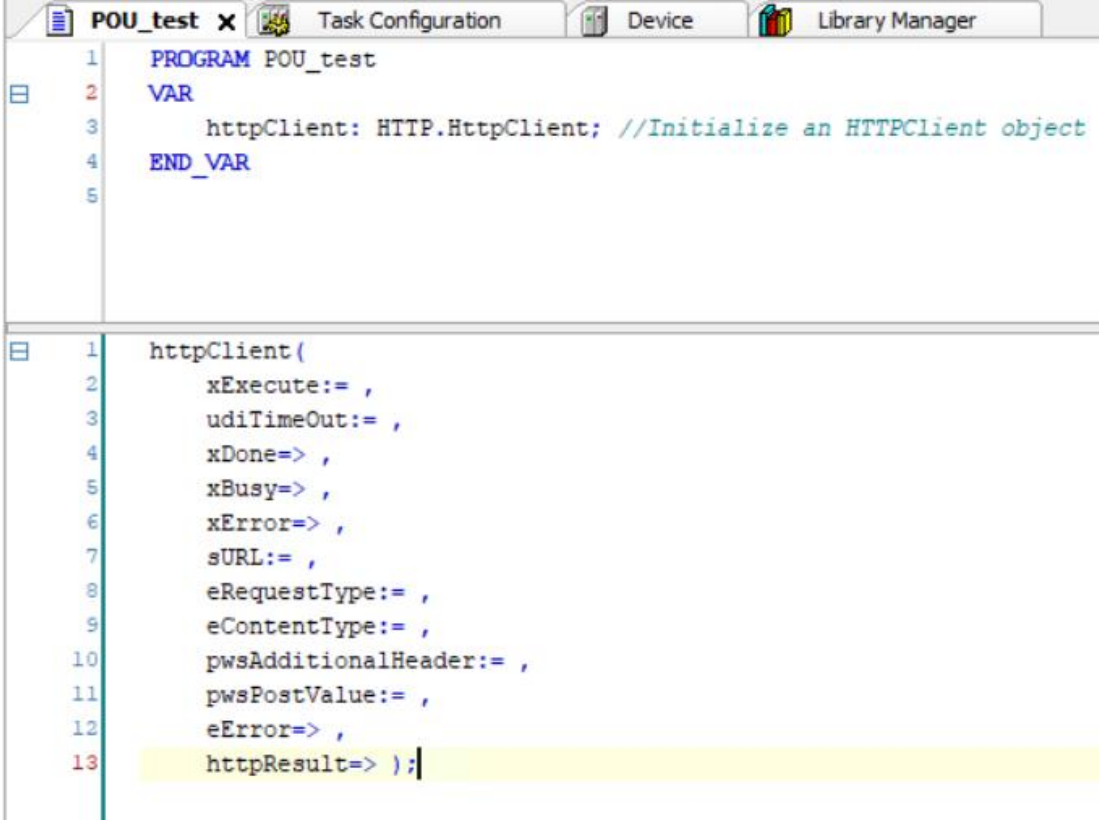




4. After adding the library, check the [Message] window for errors. If the following errors are found, install the missing dependent libraries.



5. [Message] The window displays "0 errors", and you can directly define and use the function block in the program.



```

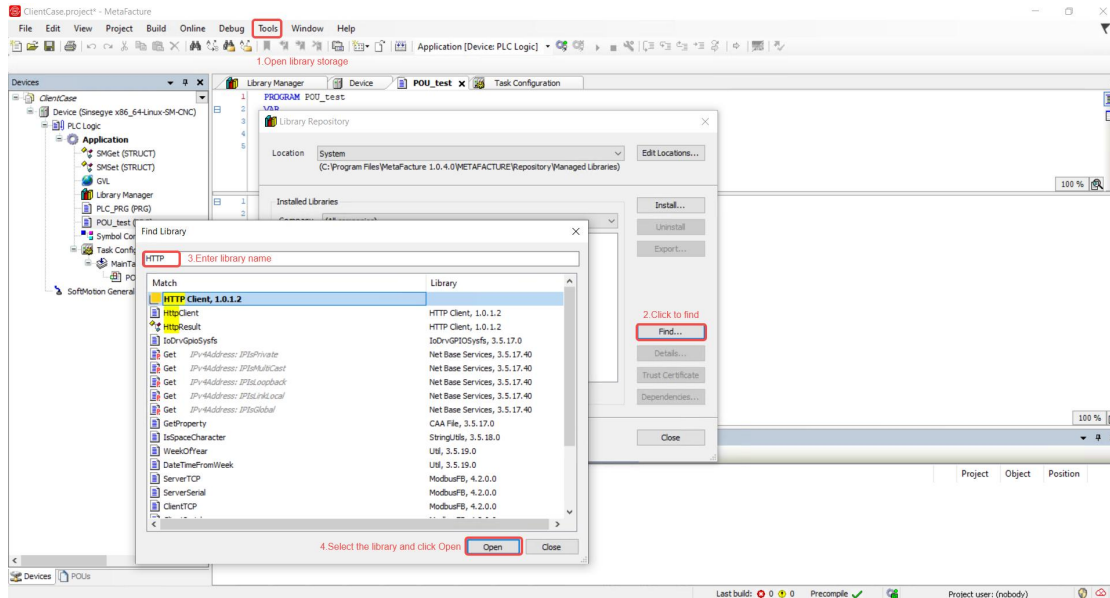
1  PROGRAM POU_test
2  VAR
3      httpClient: HTTP.HttpClient; //Initialize an HTTPClient object
4  END_VAR
5
6
7
8
9
10
11
12
13  httpClient(
14      xExecute:= ,
15      udiTimeOut:= ,
16      xDone=> ,
17      xBusy=> ,
18      xError=> ,
19      sURL:= ,
20      eRequestType:= ,
21      eContentType:= ,
22      pwsAdditionalHeader:= ,
23      pwsPostValue:= ,
24      eError=> ,
25      httpResult=> );
  
```

6. you do not find the library you want in the filter results in step 3
  - a. Please check whether the search library name you entered is correct.
  - b. Please make sure that the library has been installed. If not, please [install the library](#) first. If you are not sure whether it has been installed, you can click [Find] in the [Library Storage] dialog box to see if the library can be found. If not, it means that it has not been installed.

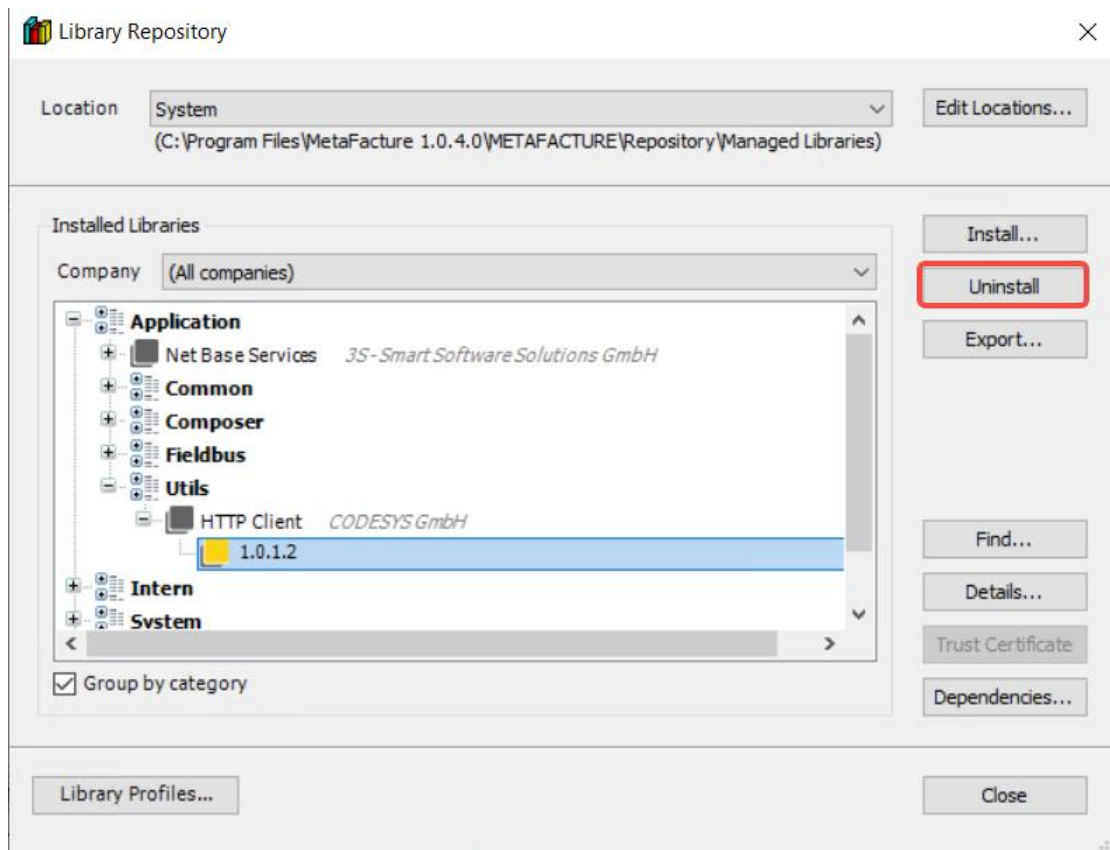
## Section 3: Uninstalling the library

1. In MetaFacture , click [Tools] - [Library Storage ... ] in the menu bar to open the Library Storage

If you cannot find the library you want to uninstall, you can click the [Find] button on the [Library Storage] page, enter the name of the library you want to uninstall, select the library you want to uninstall in the filter results, and click [Open].



2. Select the library you want to uninstall and click [Uninstall].



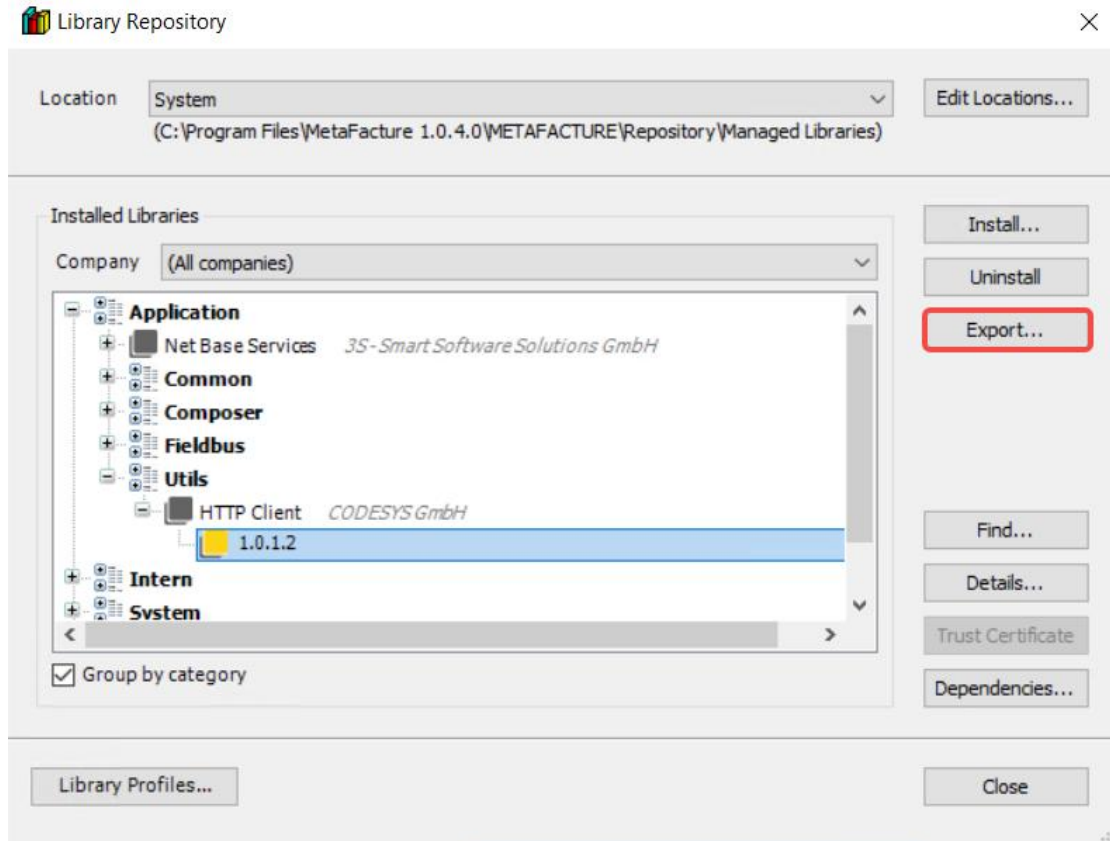
3. Close the dialog box when the uninstallation is complete

## Section 4: Exporting the Library

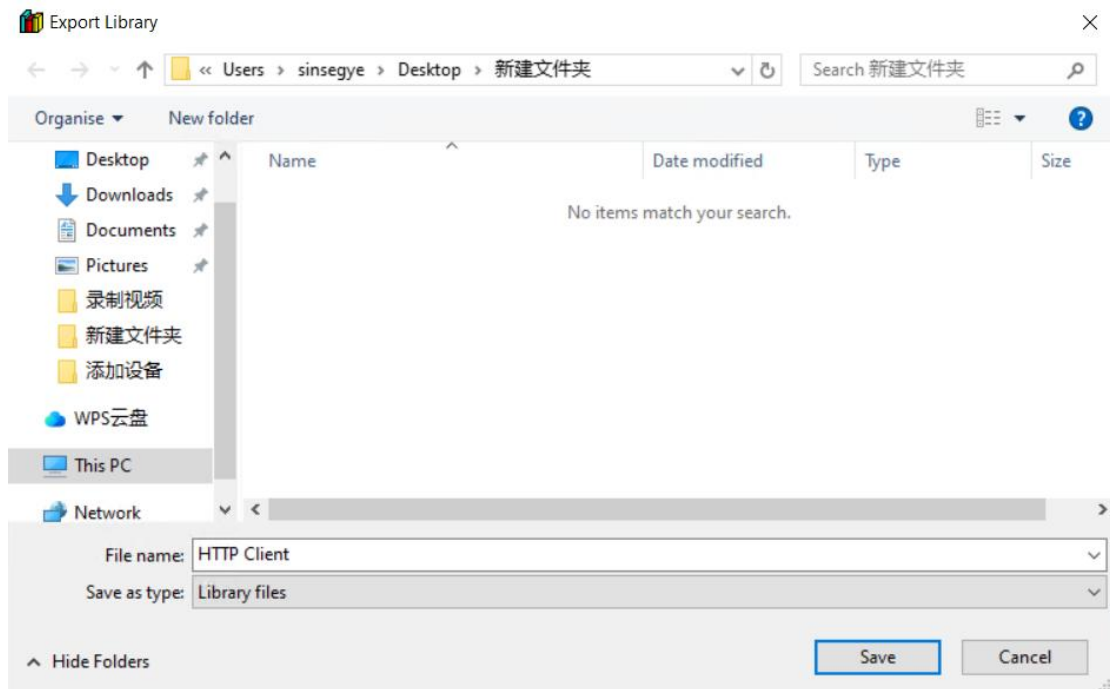
1. In MetaFacture , click [Tools] - [Library Storage ...] in the menu bar.

If you cannot find the library you want to export, you can click the [Find] button on the library storage page, enter the name of the library to be exported, select the library to be exported in the filter results, and click [Open].

2. Select the library you want to export and click [Export].



3. Select a folder to save, enter the [File Name], and click [Save]



4. Close the dialog box and go to the specified save folder to view the exported library file.