

STM32CubeIDE installation

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The development tool used for the tutorial is the STM32CubeIDE software

1、 Software download

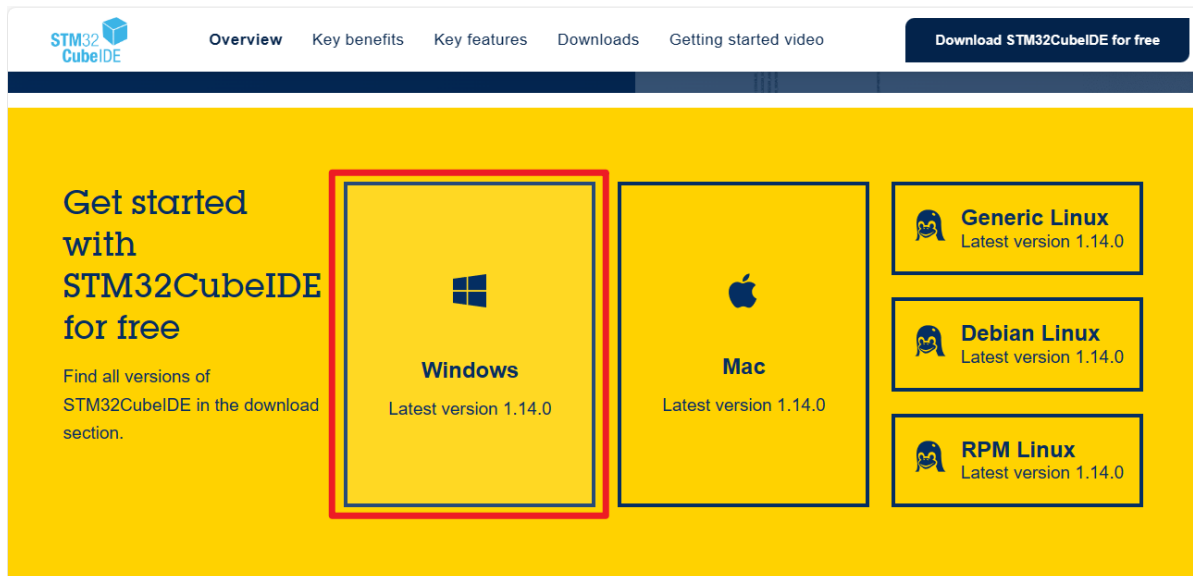
1.1、 Software download

ST office website: https://www.st.com/content/st_com/en/stm32cubeide.html



1.2、 Choosing a platform


- **platform:** Windows




1.3、 Filling in information

- **Agreement of consent**

EXCEPT AS EXPRESSLY PERMITTED HEREUNDER AND SUBJECT TO THE APPLICABLE LICENSING TERMS FOR ANY THIRD-PARTY SOFTWARE INCORPORATED IN THE SOFTWARE PACKAGE AND OPEN SOURCE TERMS AS APPLICABLE, NO LICENSE OR OTHER RIGHTS, WHETHER EXPRESS OR IMPLIED, ARE GRANTED UNDER ANY PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF STMICROELECTRONICS OR ANY THIRD PARTY.

 [.SAVE AS PDF](#)

 Additional License Terms for STM32CubeIDE 1.14.0

DECLINE **Accept**

- **Filling in information**

Get Software

If you have an account on my.st.com, login and download the software without any further validation steps.

Login/Register

If you don't want to login now, you can download the software by simply providing your name and e-mail address in the form below and validating it.

This allows us to stay in contact and inform you about updates of this software.

For subsequent downloads this step will not be required for most of our software.

First Name:

ML

Last Name:

W

E-mail address:

02@qq.com

Please enter a valid e-mail address.

Please review our [Privacy Statement](#) that describes how we process your profile information and how to assert your personal data protection rights



Please keep me informed about future updates for this software or new software in the same category

Download

The email address needs to be filled in accurately, and the software download link will be sent to you by email

- Complete submission

Your registration has been successfully submitted!

To validate your e-mail and start the download, please click on the link inside the e-mail that has been sent to you.

This link will be valid for **24 hours**.

Please check your spam filters in case you did not receive the e-mail.

ok

- Email to download the installer



Start your software download

Hi ML

Please click on this button to validate your email address and start the download of STM32CubeIDE-Win

Download now

If you have any further issues, please send your request to our [online support](#) using the subject line: Software download issues.

Thank you,

STMicroelectronics
www.st.com

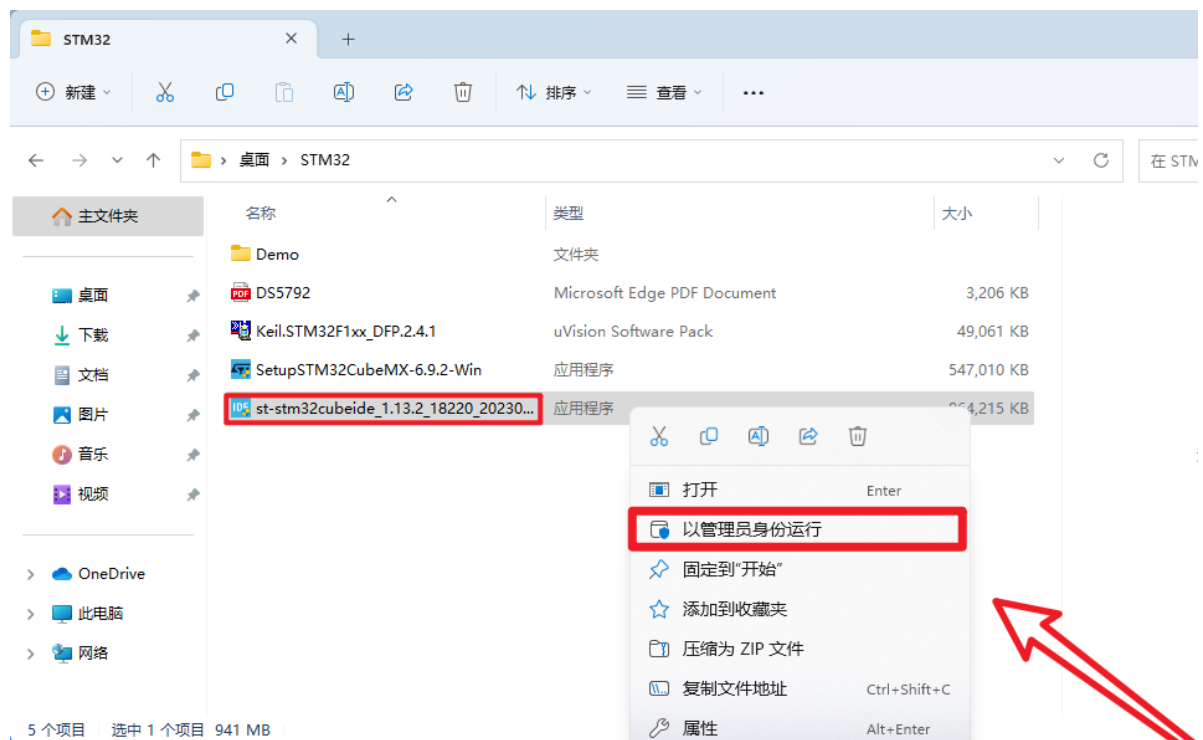
Click on the link to go to the official website, the website will automatically jump out of the software compressed package download window

2、 Software Installation

2.1、 Open the installer

- **Administrator**

Open the installation package as an administrator

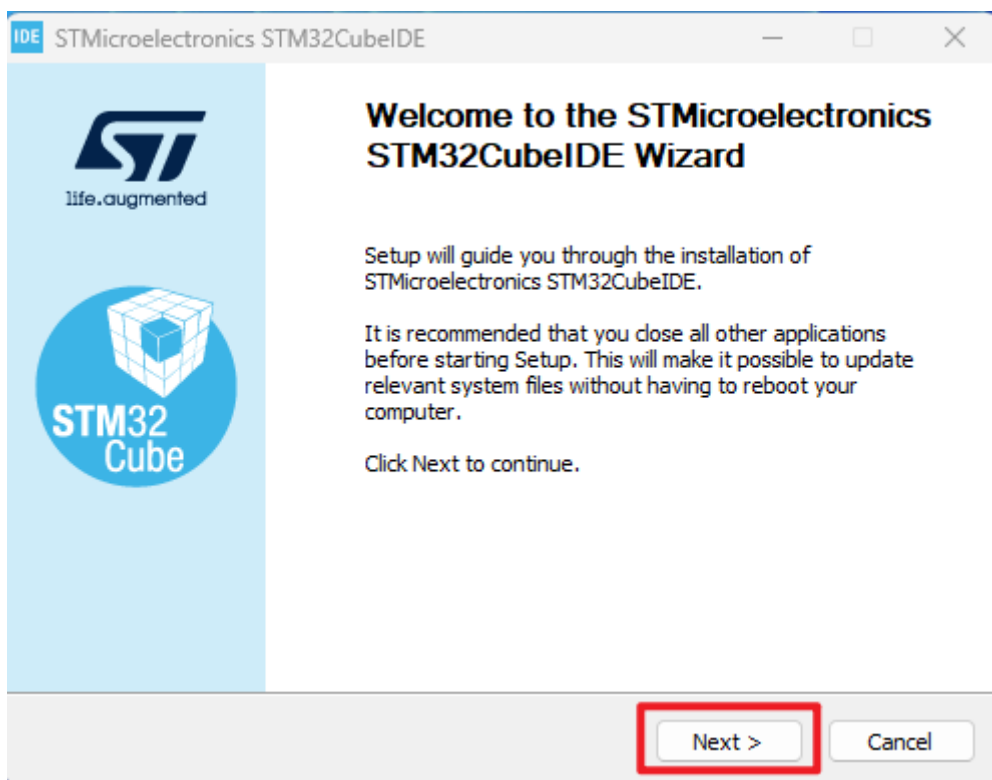


If you open the software installation package, then you see "NSIS ERROR: error launching installer" error:

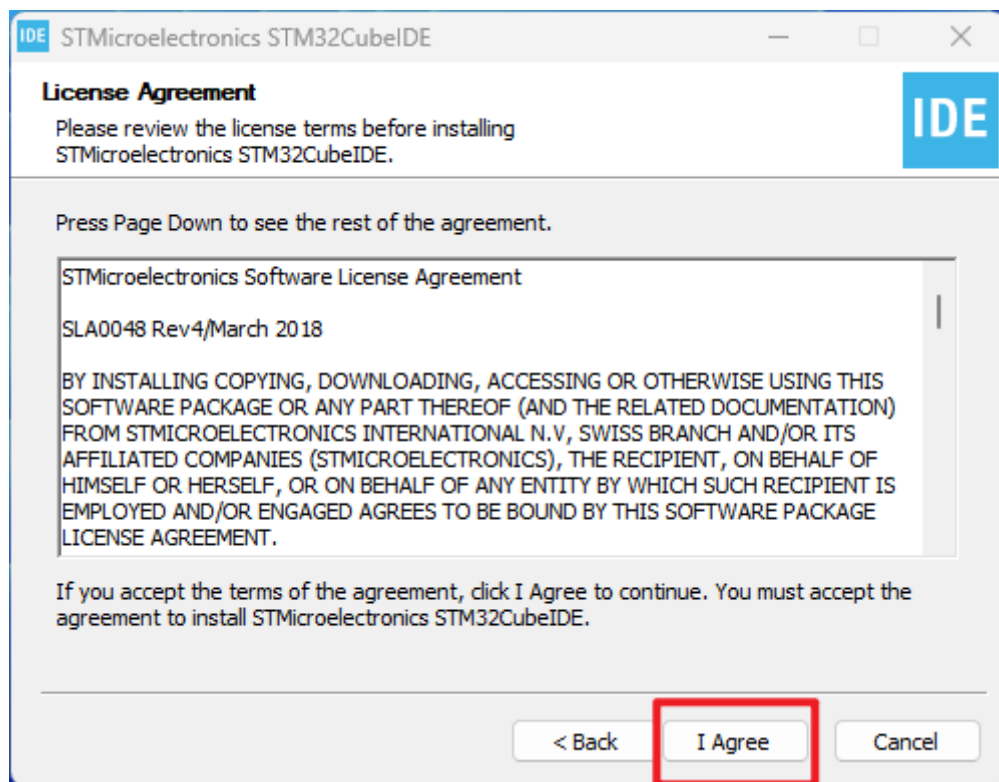
Please put the package in the path without Chinese characters

2.2、Installation Process - Setup

- Next

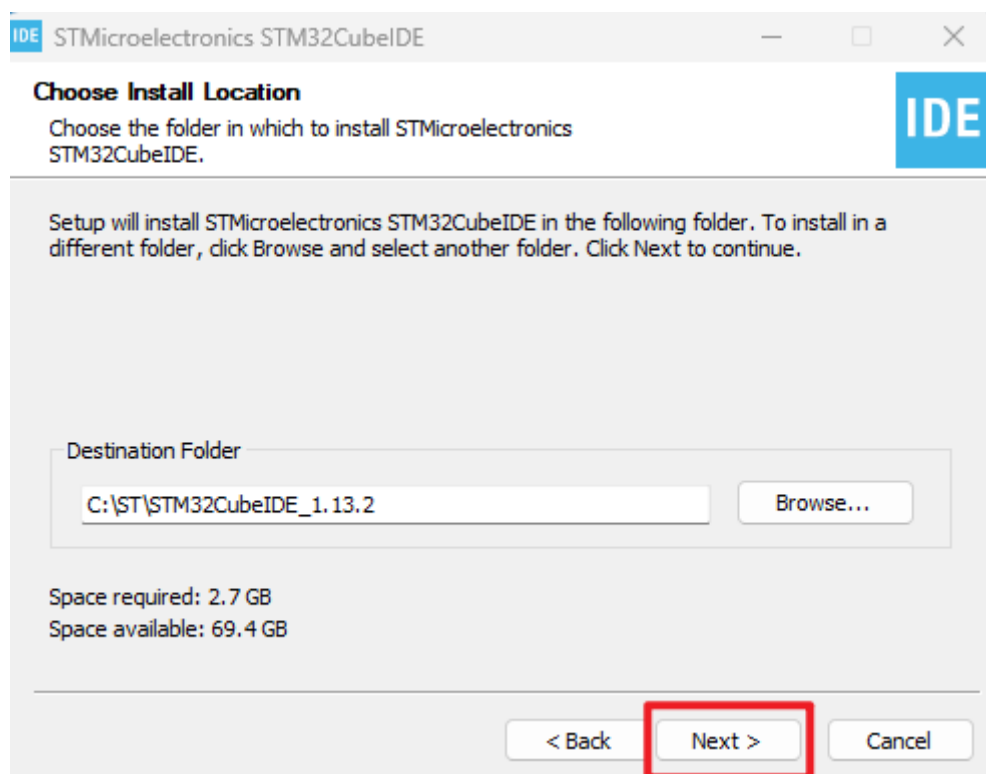


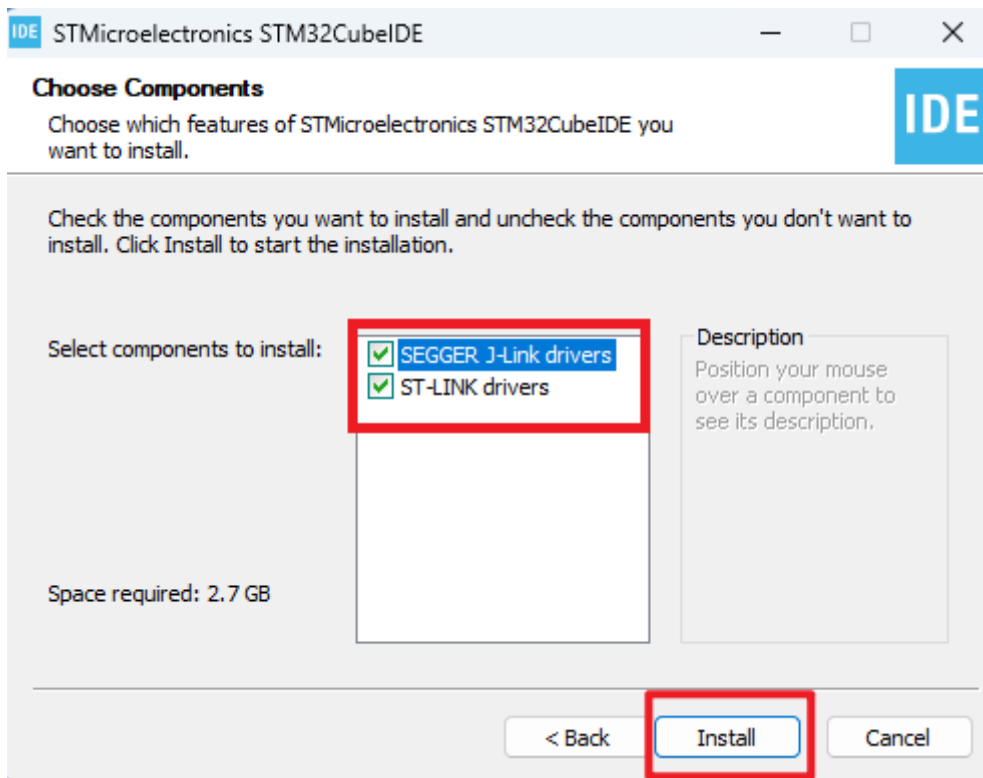
- Agreement of consent → I agree



- **Location of installation → Next → Install**

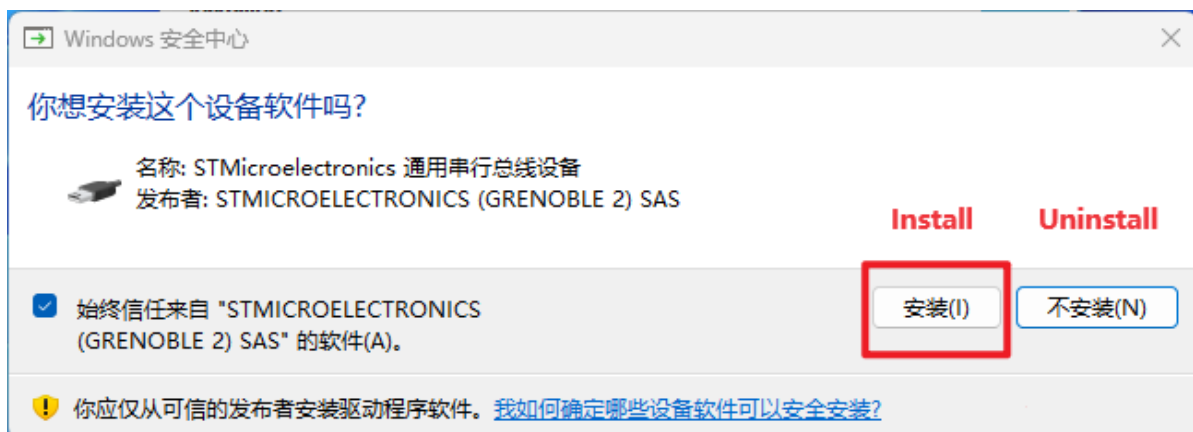
The following are recommended to use the default installation location of the software and the path does not contain Chinese characters





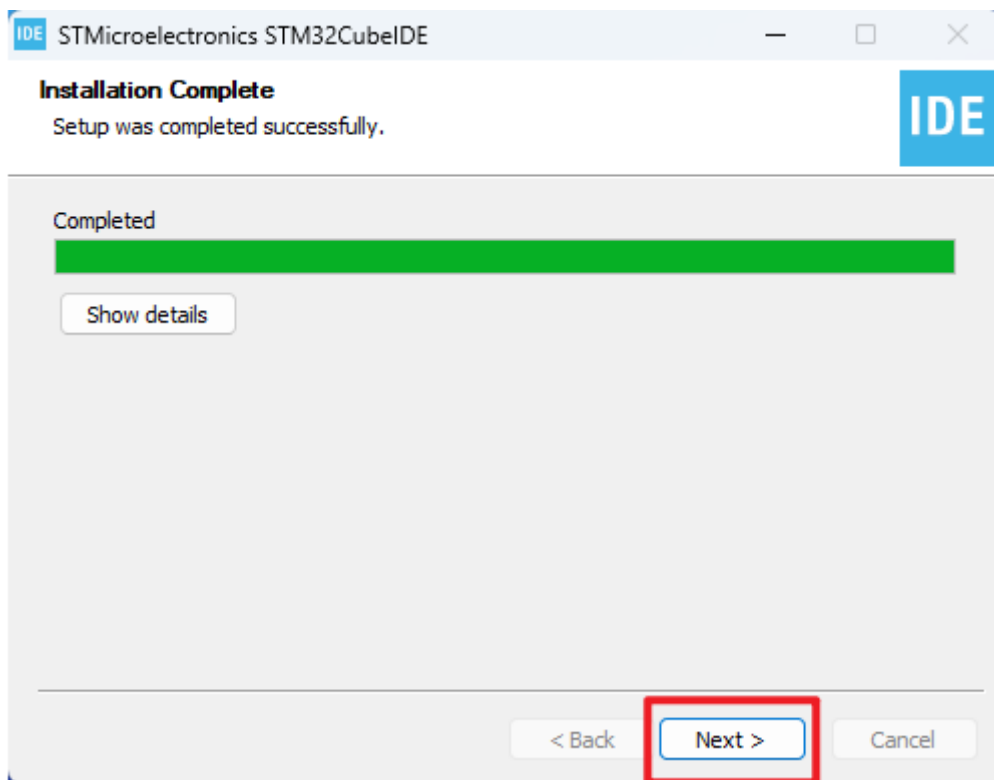
Check the option to install ST-Link and J-Link drivers

- Installing the driver

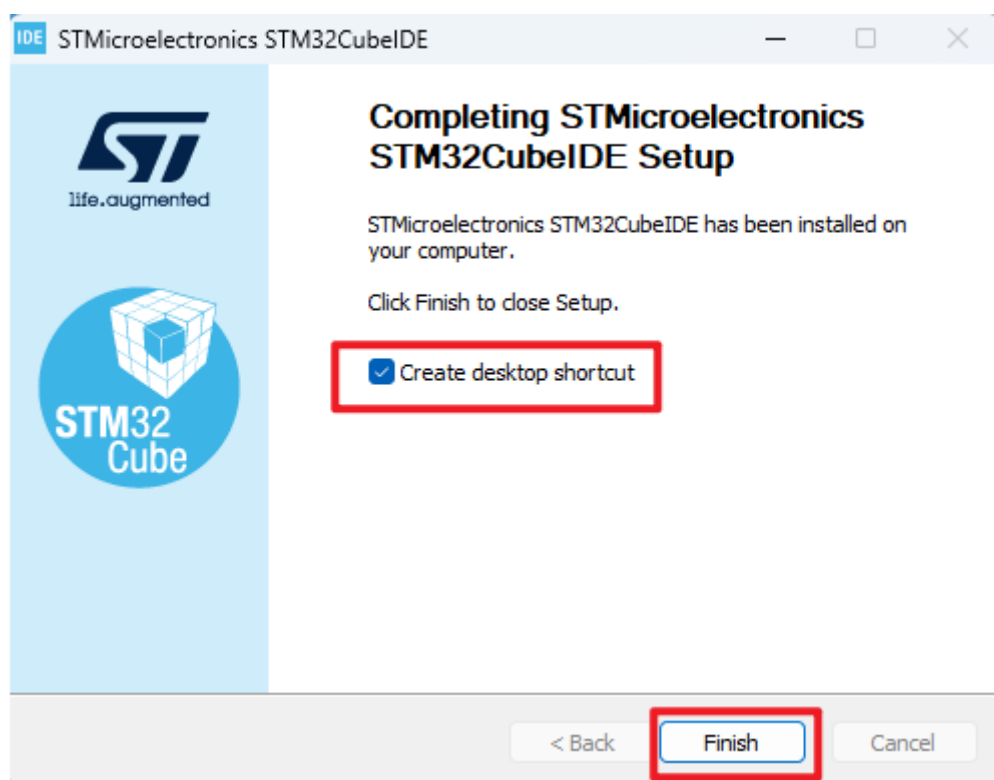


If you followed the tutorial in Chapter 2 to this point, you'll notice that the ST-Link, J-Link, and ULINK drivers are all installed

- Waiting for installation → Next



- **Finish**



3、 Software configuration

Familiar with software options and functions.

3.1、 Open the application

- **Click on Left mouse button:** double-click the desktop app

STM32 CubeIDE

- Choosing a workspace

IDE STM32CubeIDE Launcher

Select a directory as workspace

STM32CubeIDE uses the workspace directory to store its preferences and development artifacts.

Workspace: ①

☐ Use this as the default and do not ask again

②

You can create a new folder, the folder path can not contain Chinese characters

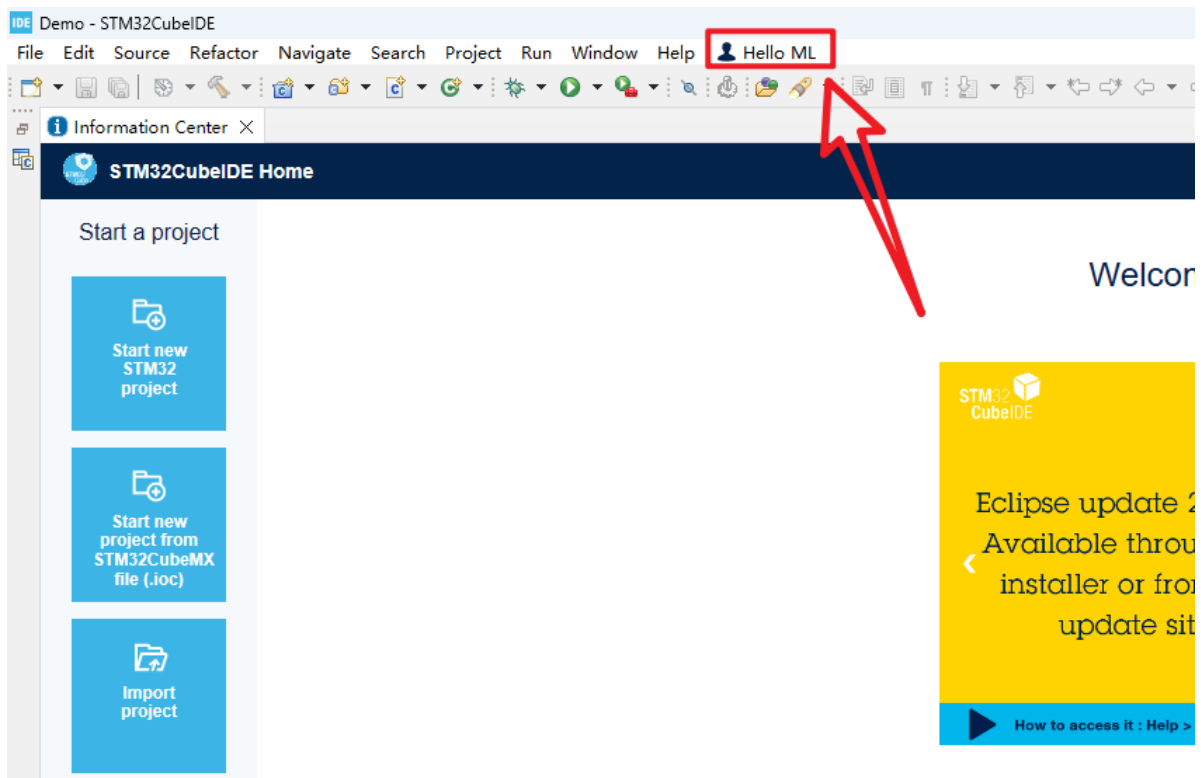
IDE Features Usage Statistics Agreement

Help STMicroelectronics improve its products.

ST int N.V (as data controller) collects and uses anonymous features usage statistics (directly or by ST affiliates) when you use the application for the purpose of continuously improving the application.
You can stop the collection of your features usage statistics when you use the application at any time with effect for the future or update your preferences via the menu
Window > Preferences > STM32Cube > End User Agreements

For details please see our [Data collection information notice](#), [Privacy Policy](#) and [Terms of Use](#)

3.2、 Sign-up - Login to your account

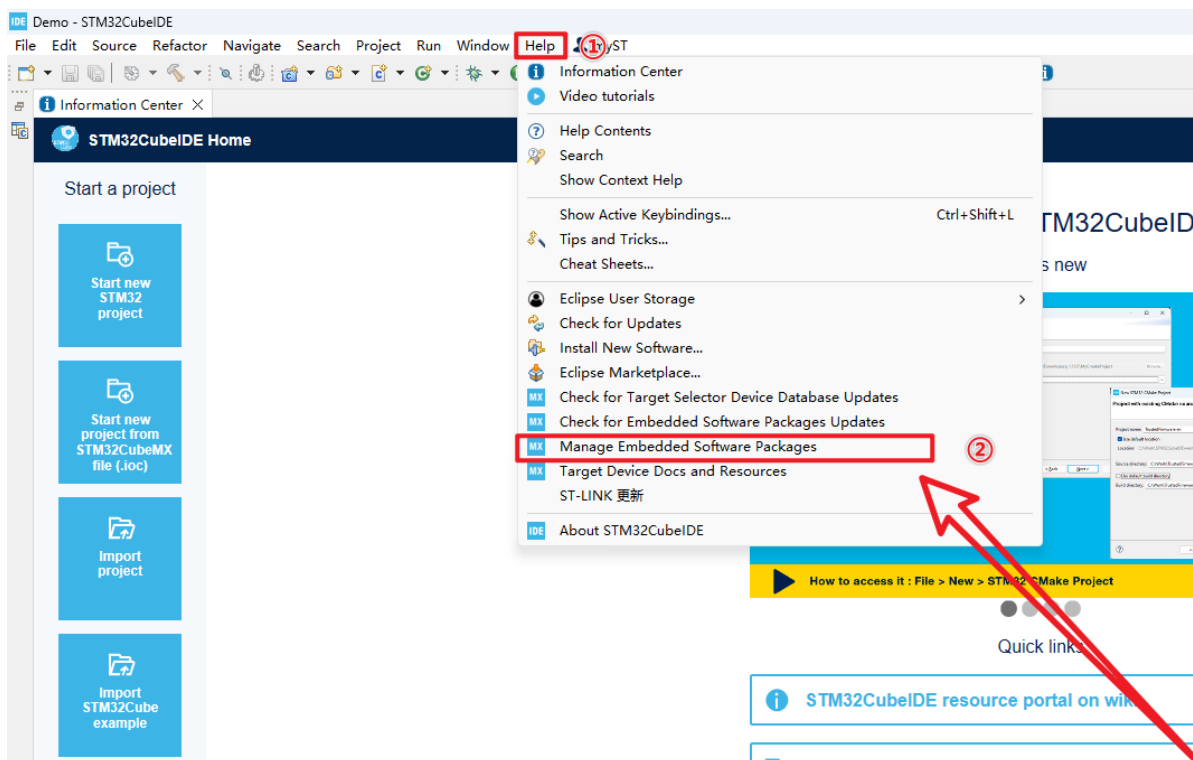


Since I installed STM32CubeMX before and logged in my account on that software, the system logged in my account by default

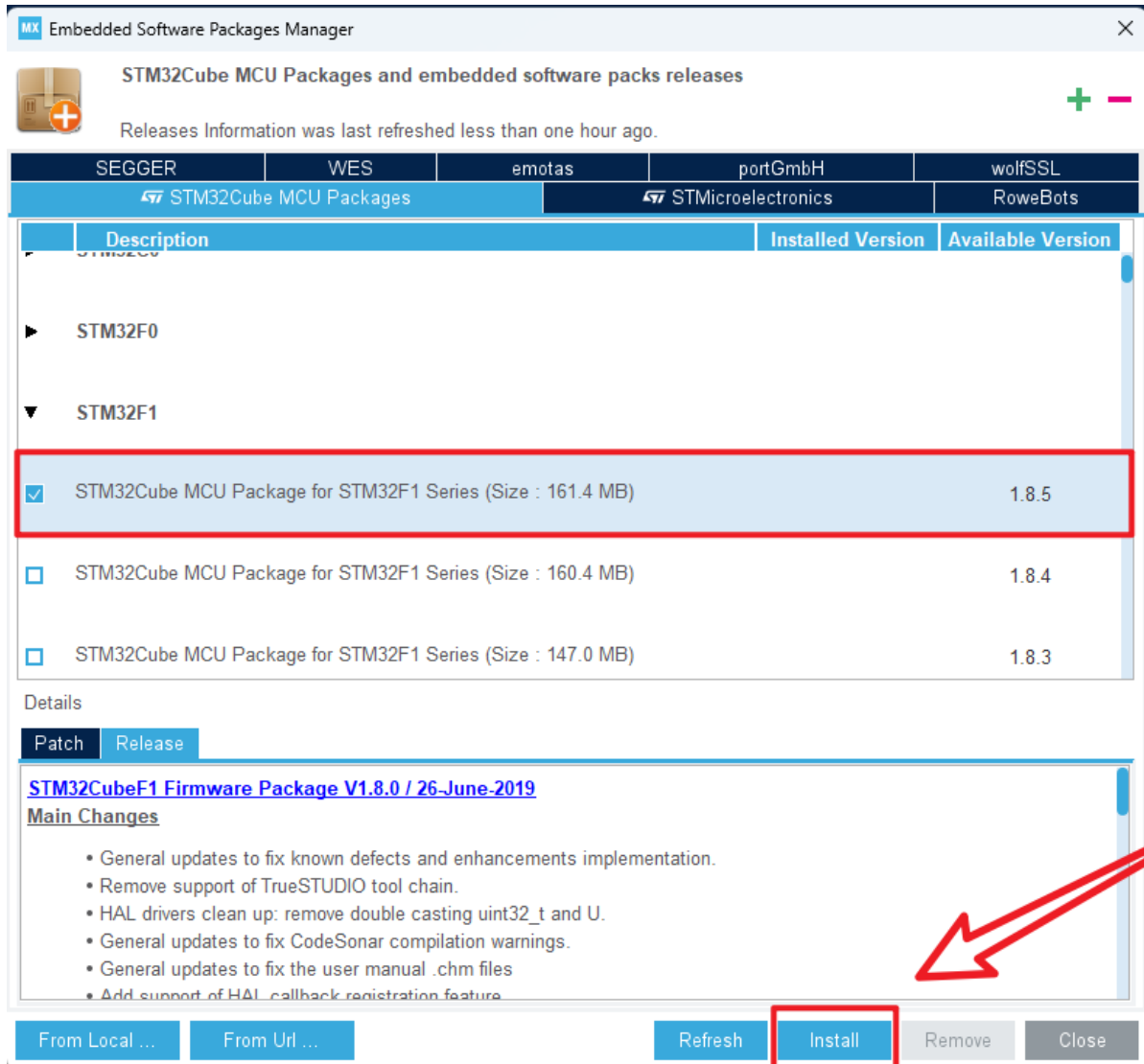
Do not register and login accounts can refer to the "STM32CubeMX installation" tutorial

3.3、 Installing the firmware package

- Help → Manage embedded software packages



- Install the latest firmware package of the STM32F1 series



MX Embedded Software Packages Manager

STM32Cube MCU Packages and embedded software packs releases

Releases Information was last refreshed less than one hour ago.

SEgger	WES	emotas	portGmbH	wolfSSL
STM32Cube MCU Packages	STMicroelectronics	RoweBots		

Description	Installed Version	Available Version
STM32F0		
STM32F1		
<input checked="" type="checkbox"/> STM32Cube MCU Package for STM32F1 Series (Size : 161.4 MB)		1.8.5
<input type="checkbox"/> STM32Cube MCU Package for STM32F1 Series (Size : 160.4 MB)		1.8.4
<input type="checkbox"/> STM32Cube MCU Package for STM32F1 Series (Size : 147.0 MB)		1.8.3

Details

Patch Release

[STM32CubeF1 Firmware Package V1.8.0 / 26-June-2019](#)

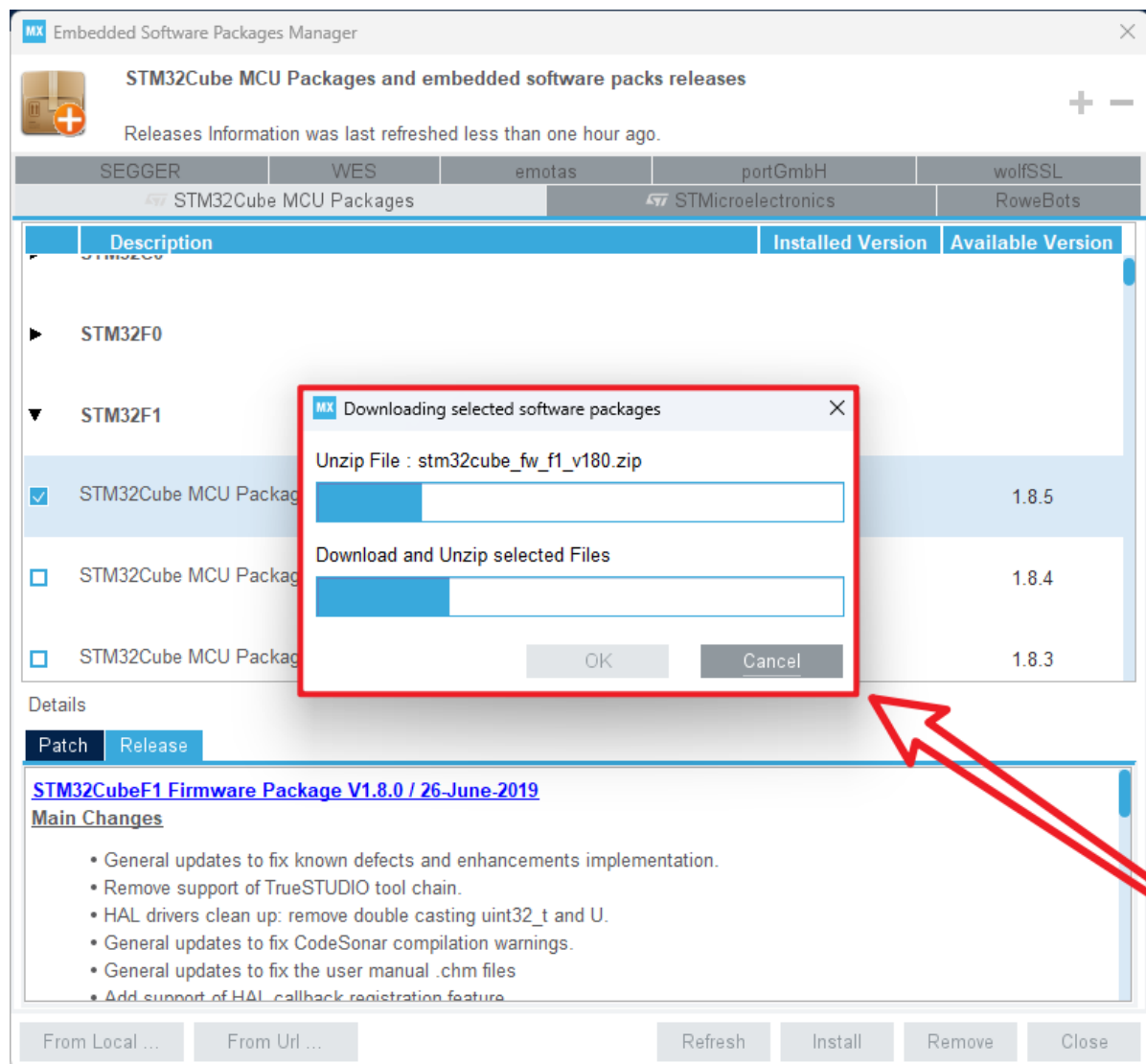
Main Changes

- General updates to fix known defects and enhancements implementation.
- Remove support of TrueSTUDIO tool chain.
- HAL drivers clean up: remove double casting uint32_t and U.
- General updates to fix CodeSonar compilation warnings.
- General updates to fix the user manual .chm files
- Add support of HAL callback registration feature

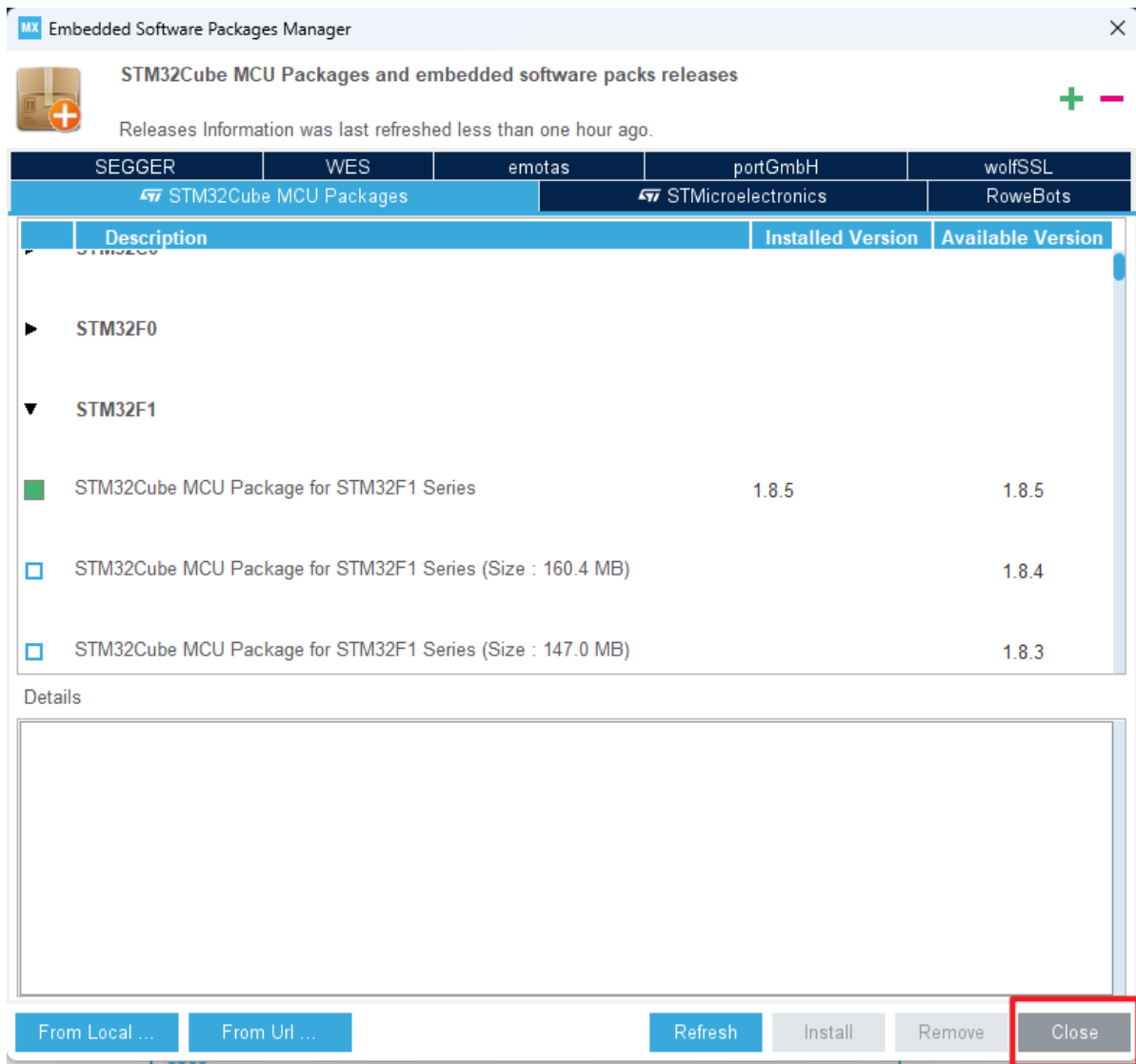
From Local ... From Url ... Refresh **Install** Remove Close

1. The chip firmware package cannot be installed without logging into the account
2. To install or uninstall, check the box in front of the chip firmware package. Click this option and there will be no install and uninstall options

- Waiting to download



- Close the page

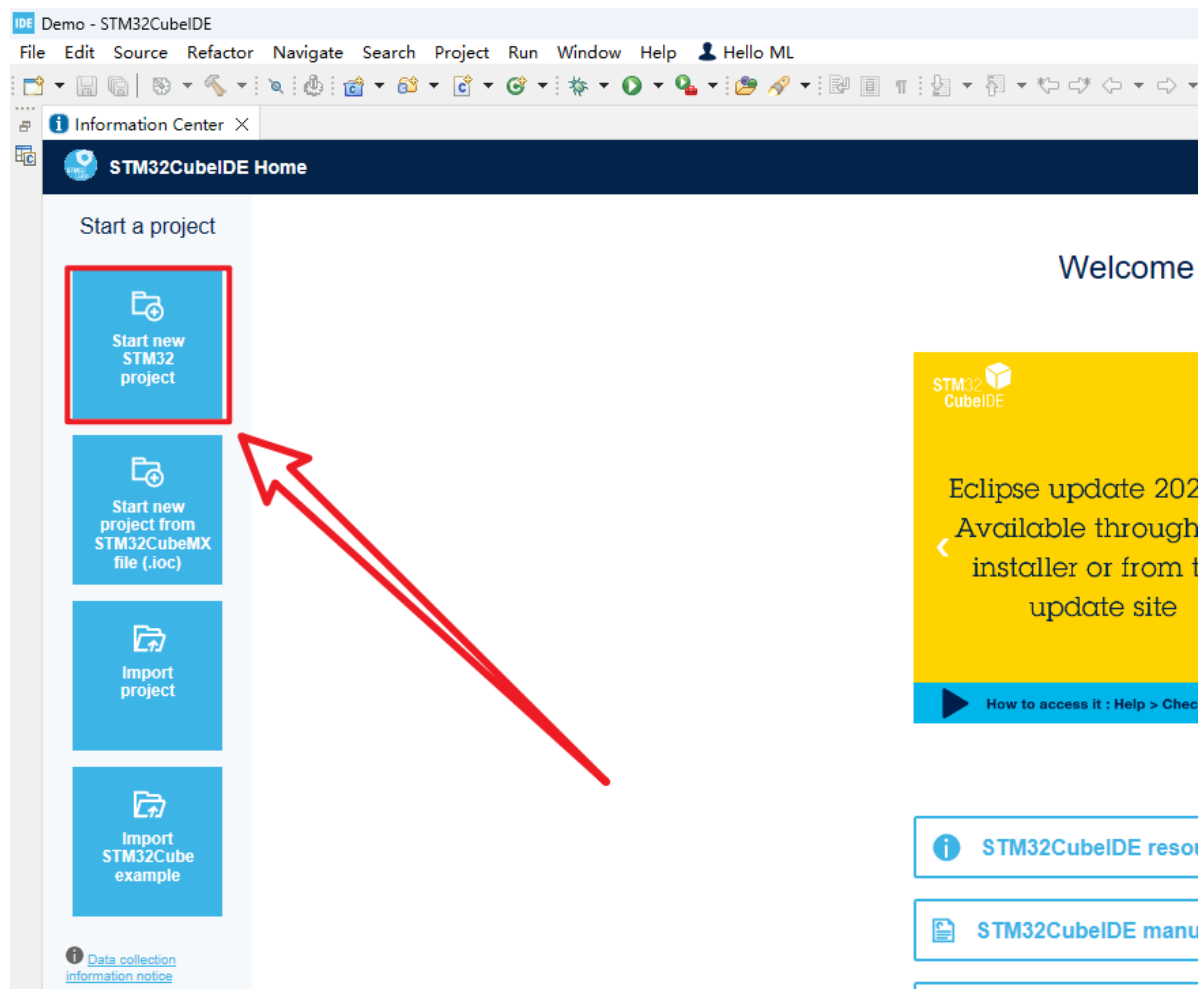


4、 Software Usage

STM32CubeIDE integrates STM32CubeMX functions, which can be used for pin configuration, and can be directly used for code writing and debugging.

Tips: The following are required for almost every project. Later in the Peripheral driver tutorial, we will skip the following steps and walk through the pin layout and configuration options to guide the user through the configuration.

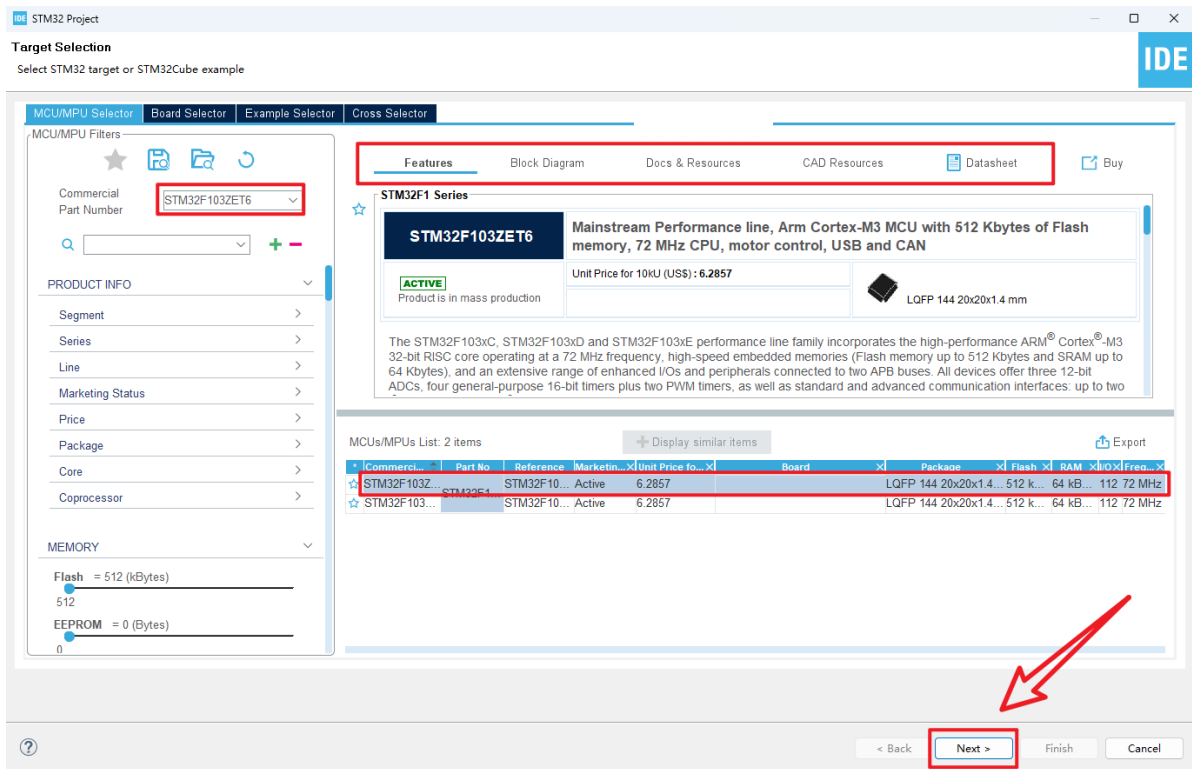
4.1、 New construction



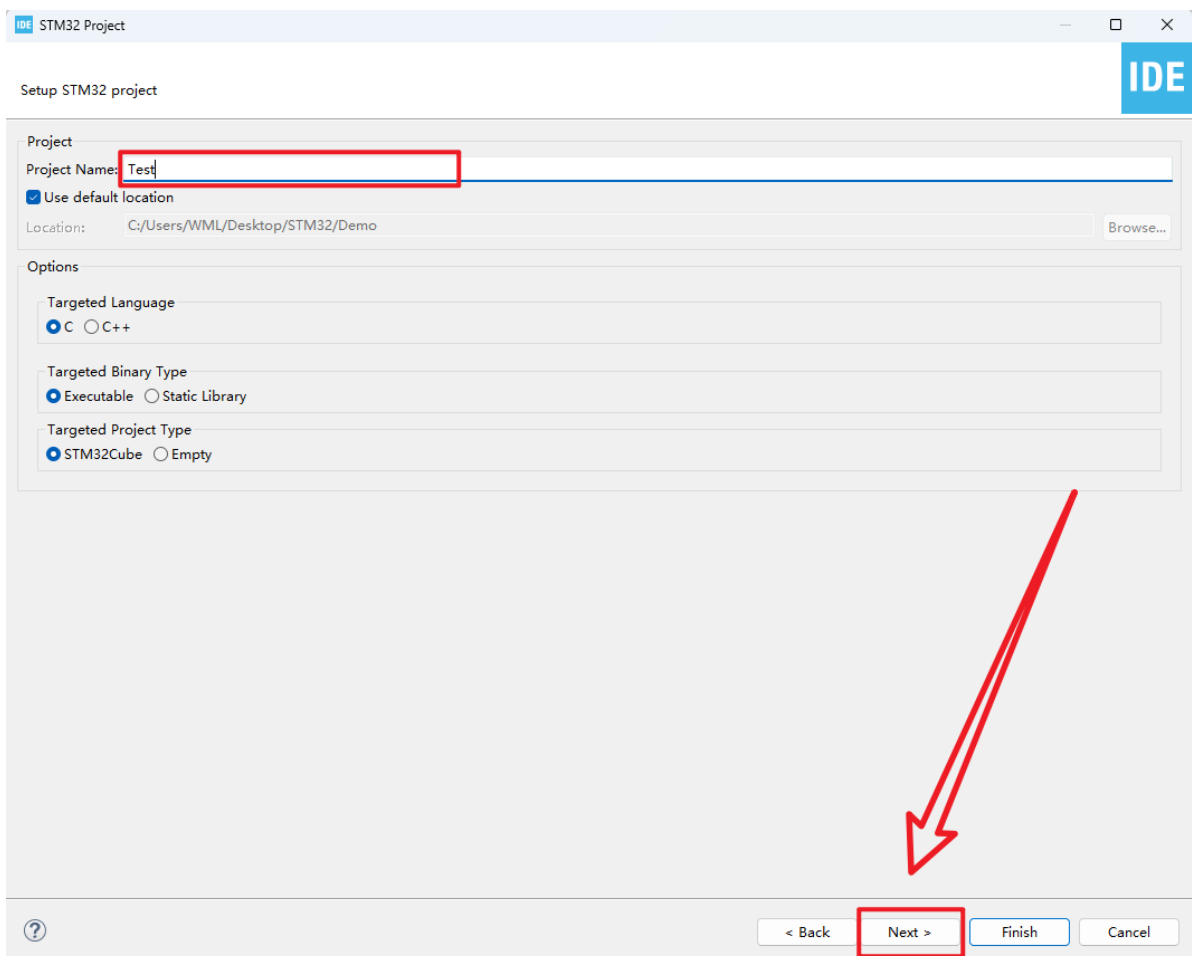
Generally, new projects can only be built through this option when the software is used for the first time, and new projects in the later period can be referred to [9, new construction again].

4.2、 Chip selection

- Chip selection and interface



4.3、Project setup



The default configuration is enough, and the project file name can be customized

IDE STM32 Project

Firmware Library Package Setup

Setup STM32 target's firmware

IDE

Target and Firmware Package

Target Reference: STM32F103ZETx

Firmware Package Name and Version: STM32Cube FW_F1 V1.8.5

Firmware and Software Package Repository

Location:
C:\Users\WML\STM32Cube\Repository

See ['Firmware Updater'](#) for settings related to package installation

Code Generator Options

☐ Add necessary library files as reference in the toolchain project configuration file

☐ Copy all used libraries into the project folder

☒ Copy only the necessary library files

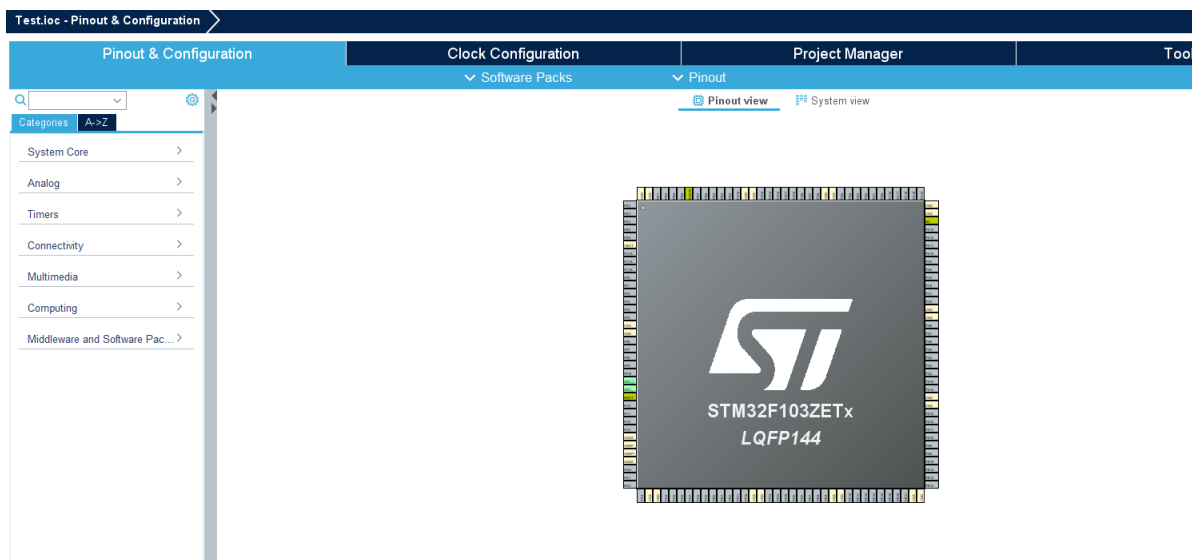
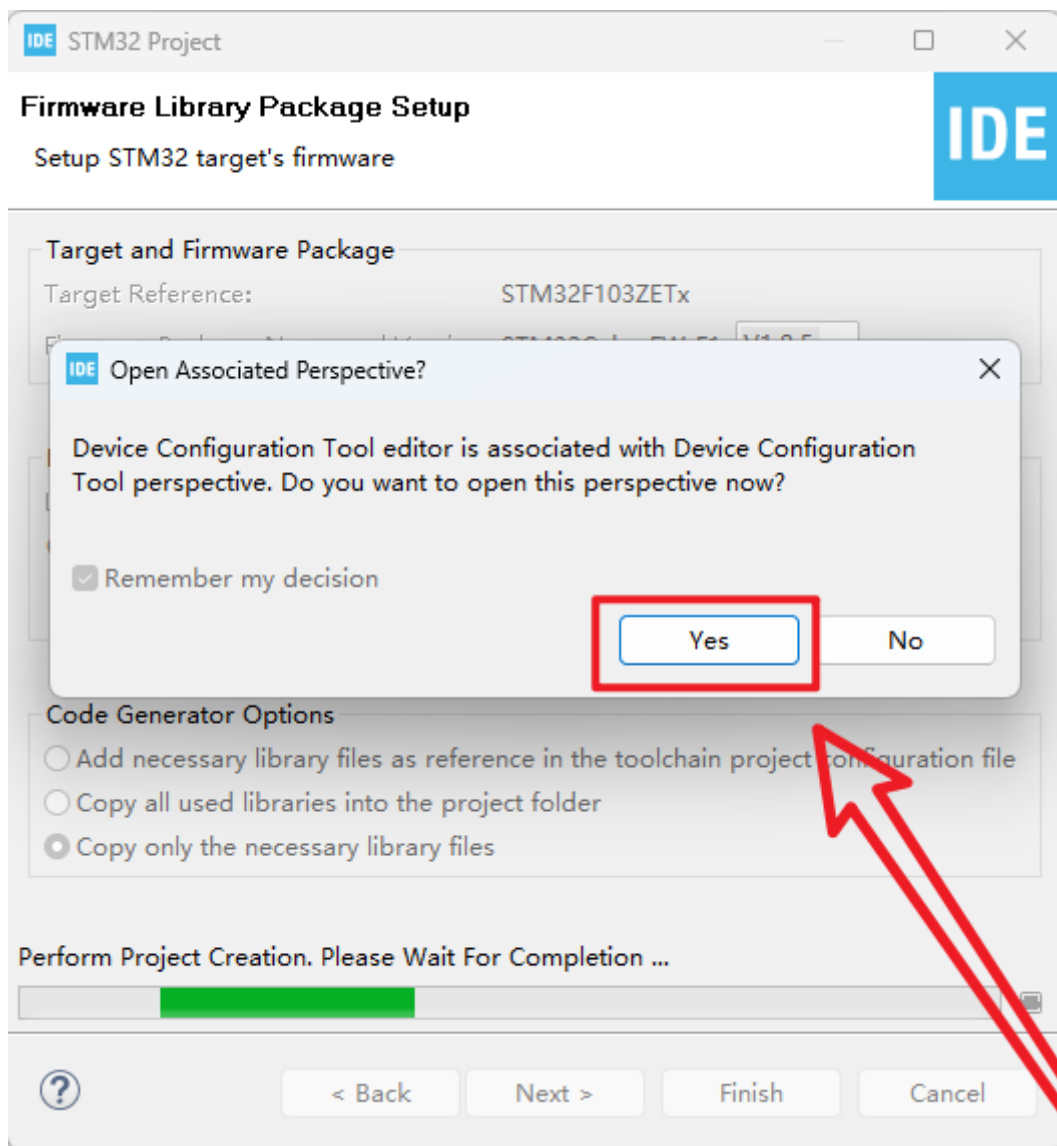
?

< Back

Next >

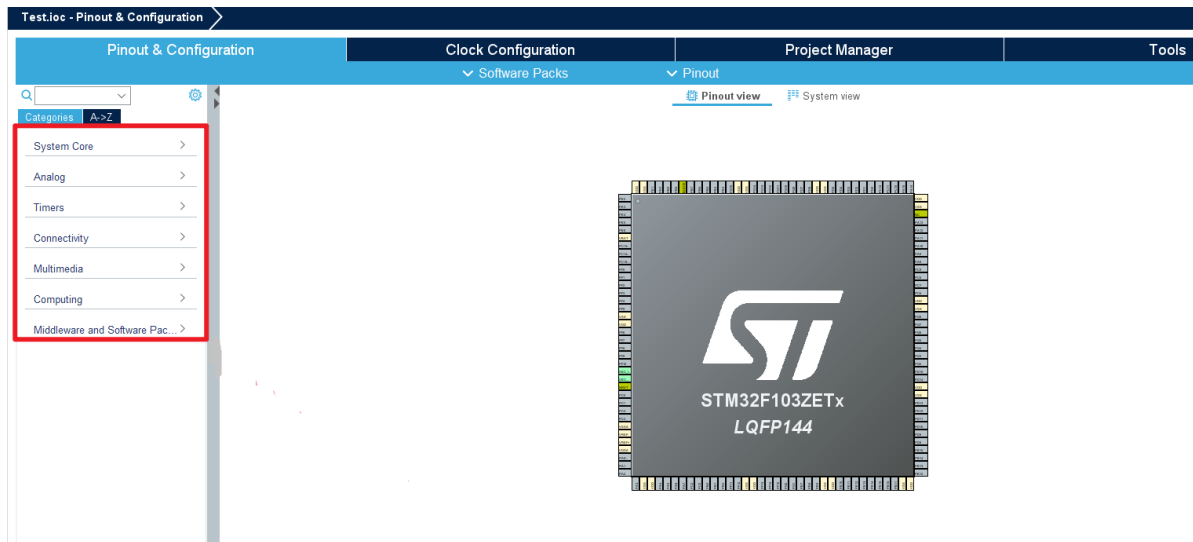
Finish

Cancel

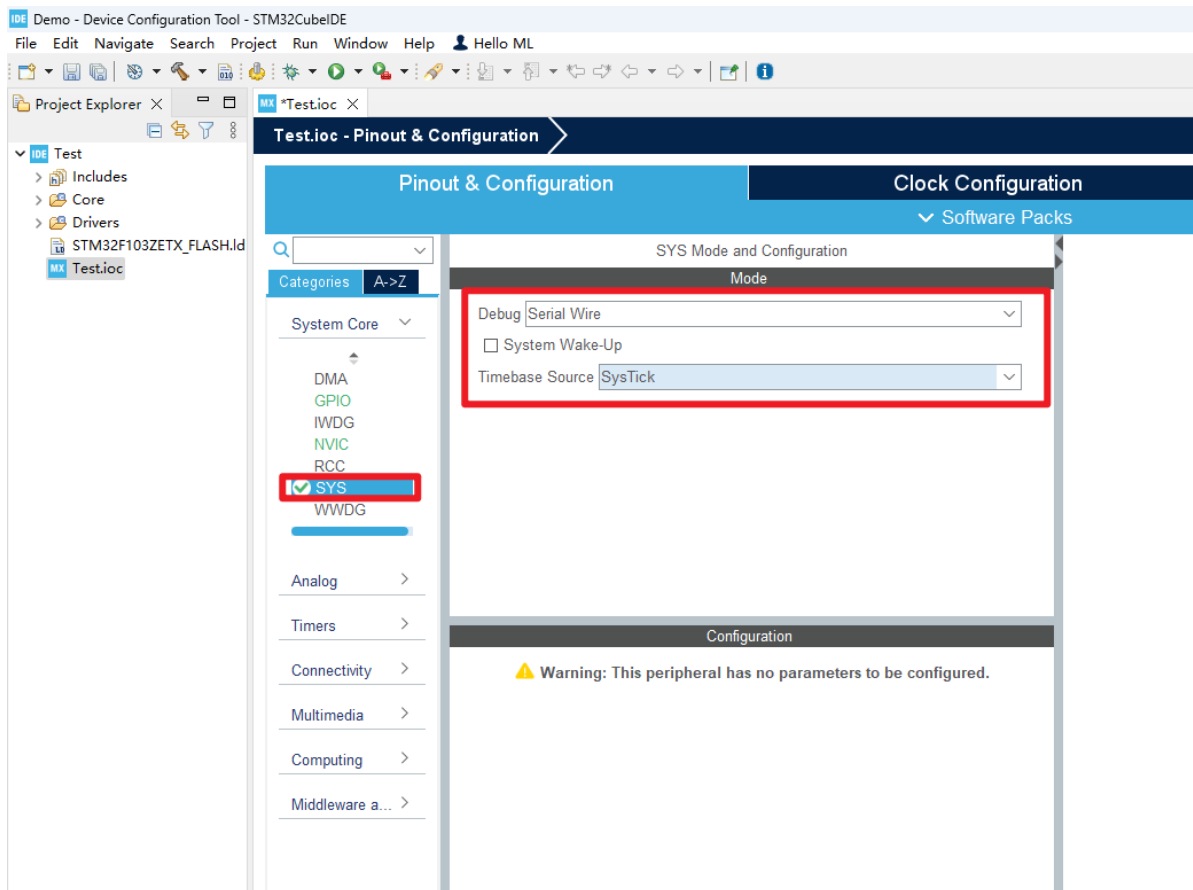


The interface is the same as STM32CubeMX

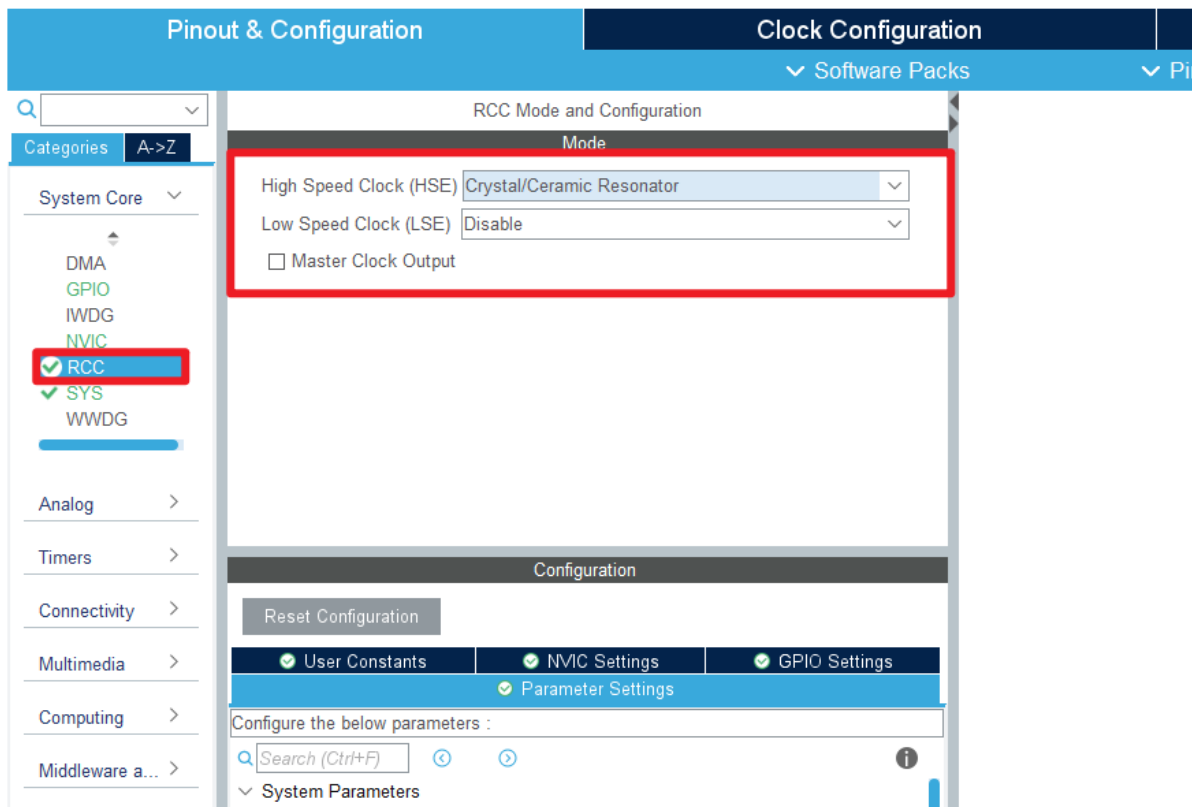
4.4、Pin layout and configuration



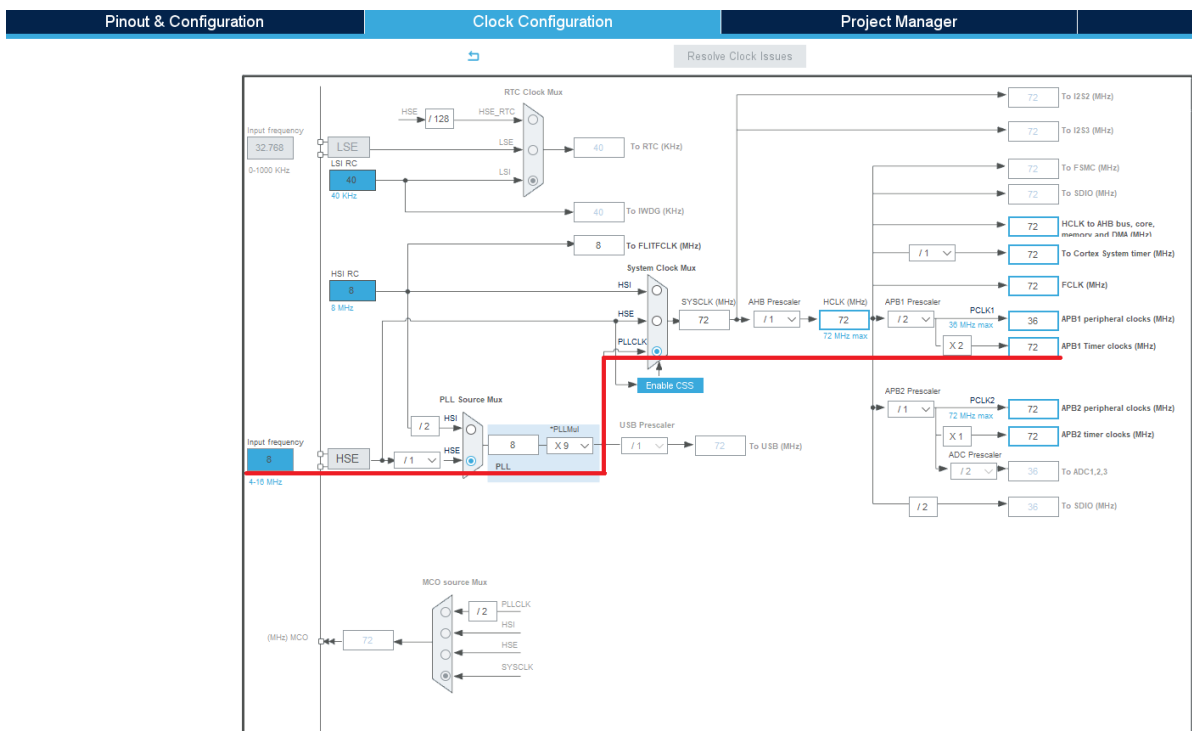
- **SYS**



- **RCC**



4.5、Clock configuration



refer to the options involved in the red line

4.6、Project management

- Project

Test.ioc - Project Manager

	Pinout & Configuration	Clock Configuration	Project Manager
Project	Project Settings Project Name <input type="text" value="Test"/>		
	Project Location <input type="text" value="C:\Users\WML\Desktop\STM32\Demo"/> <input type="button" value="Browse"/>		
Code Generator	Application Structure <input type="text" value="Advanced"/> <input type="checkbox"/> Do not generate the main()		
	Toolchain Folder Location <input type="text" value="C:\Users\WML\Desktop\STM32\Demo\Test\STM32Cube_FW_F1_V1.8.5\STM32Cube_FW_F1_V1.8.5\Toolchain\STM32CubeIDE\bin"/>		
	Toolchain / IDE <input type="text" value="STM32CubeIDE"/> <input checked="" type="checkbox"/> Generate Under Root		
Advanced Settings	Linker Settings Minimum Heap Size <input type="text" value="0x200"/>		
	Minimum Stack Size <input type="text" value="0x400"/>		
	Thread-safe Settings Cortex-M3NS <input type="checkbox"/> Enable multi-threaded support		
	Thread-safe Locking Strategy <input type="text" value="Default - Mapping suitable strategy depending on RTOS selection."/>		
	Mcu and Firmware Package Mcu Reference <input type="text" value="STM32F103ZETx"/>		
	Firmware Package Name and Version <input type="text" value="STM32Cube_FW_F1_V1.8.5"/> <input checked="" type="checkbox"/> Use latest available version		

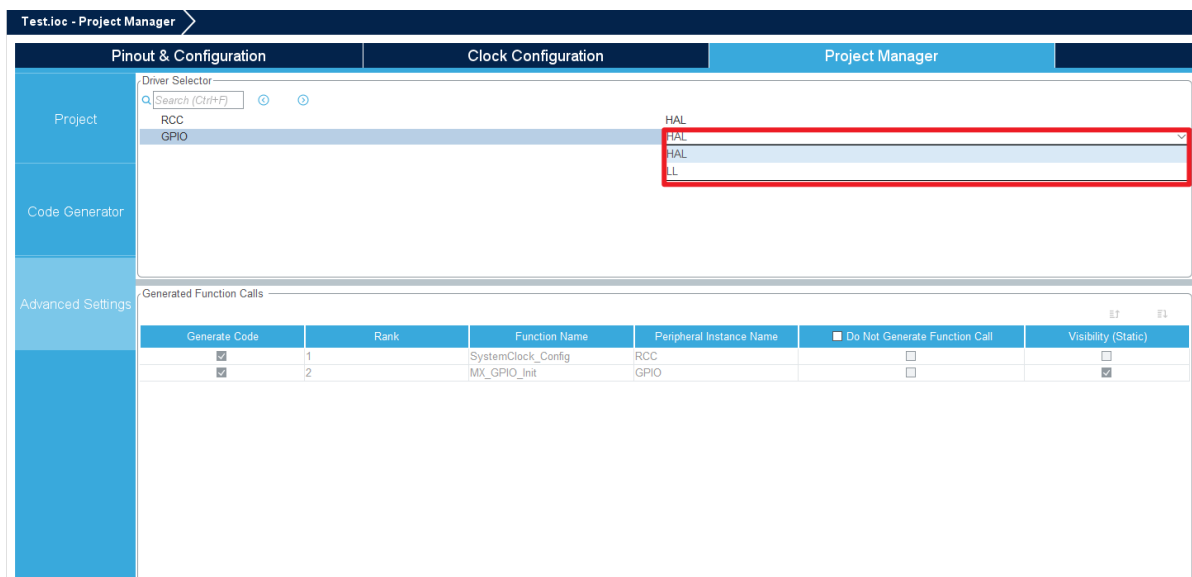
Using STM32CubeIDE can not export other project files (such as MDK-ARM project files)

• Code Generator

Test.ioc - Project Manager

	Pinout & Configuration	Clock Configuration	Project Manager
Project	STM32Cube MCU packages and embedded software packs <input type="radio"/> Copy all used libraries into the project folder <input checked="" type="radio"/> Copy only the necessary library files <input type="radio"/> Add necessary library files as reference in the toolchain project configuration file		
Code Generator	Generated files <input checked="" type="checkbox"/> Generate peripheral initialization as a pair of '.c/.h' files per peripheral <input type="checkbox"/> Backup previously generated files when re-generating <input checked="" type="checkbox"/> Keep User Code when re-generating <input checked="" type="checkbox"/> Delete previously generated files when not re-generated		
Advanced Settings	HAL Settings <input type="checkbox"/> Set all free pins as analog (to optimize the power consumption) <input type="checkbox"/> Enable Full Assert		
	User Actions Before Code Generation <input type="text"/> <input type="button" value="Browse"/>		
	After Code Generation <input type="text"/> <input type="button" value="Browse"/>		
	Template Settings Select a template to generate customized code <input type="button" value="Settings..."/>		

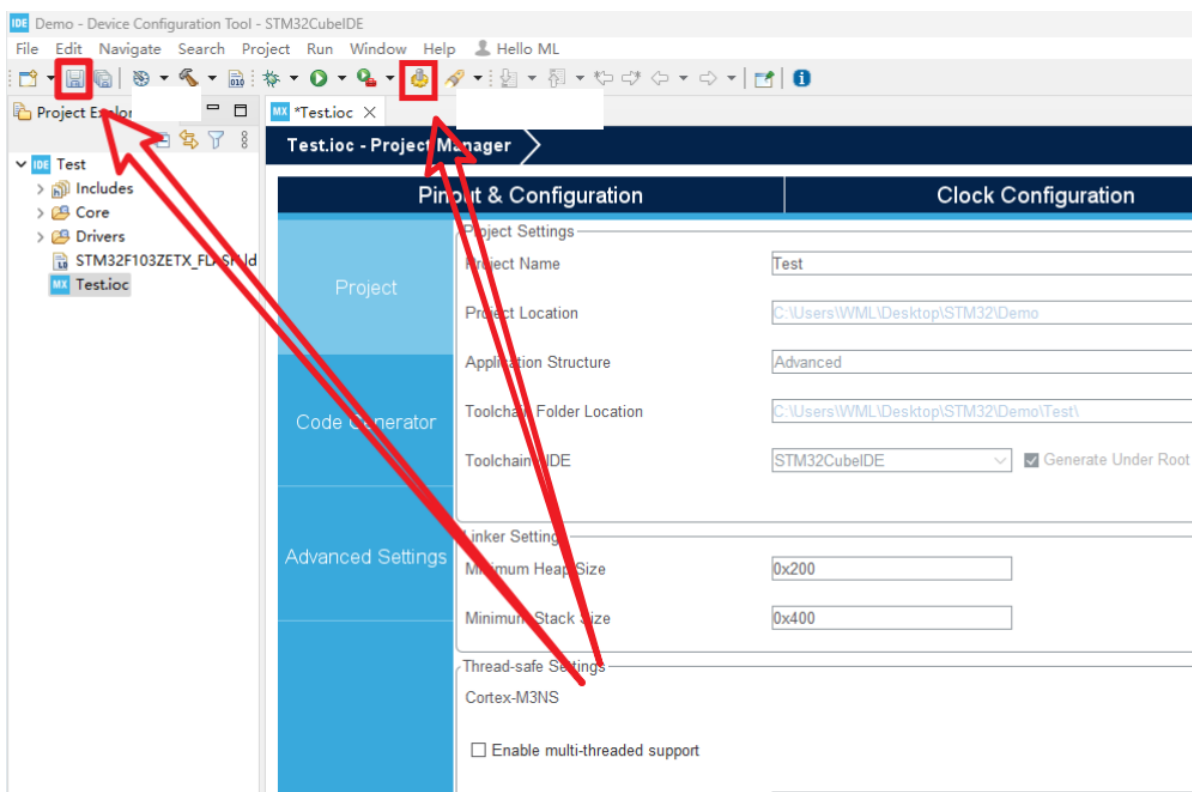
• Advance Settings



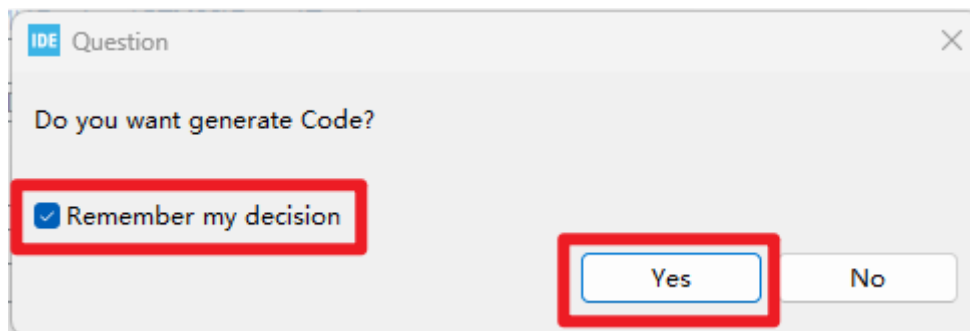
Choose the library to use for your initialization code: the HAL library is demonstrated here

4.7、Generate initialization code

Click the Code Generate or Save button to generate the initialization code



using Ctrl+S to save will also generate initialization code



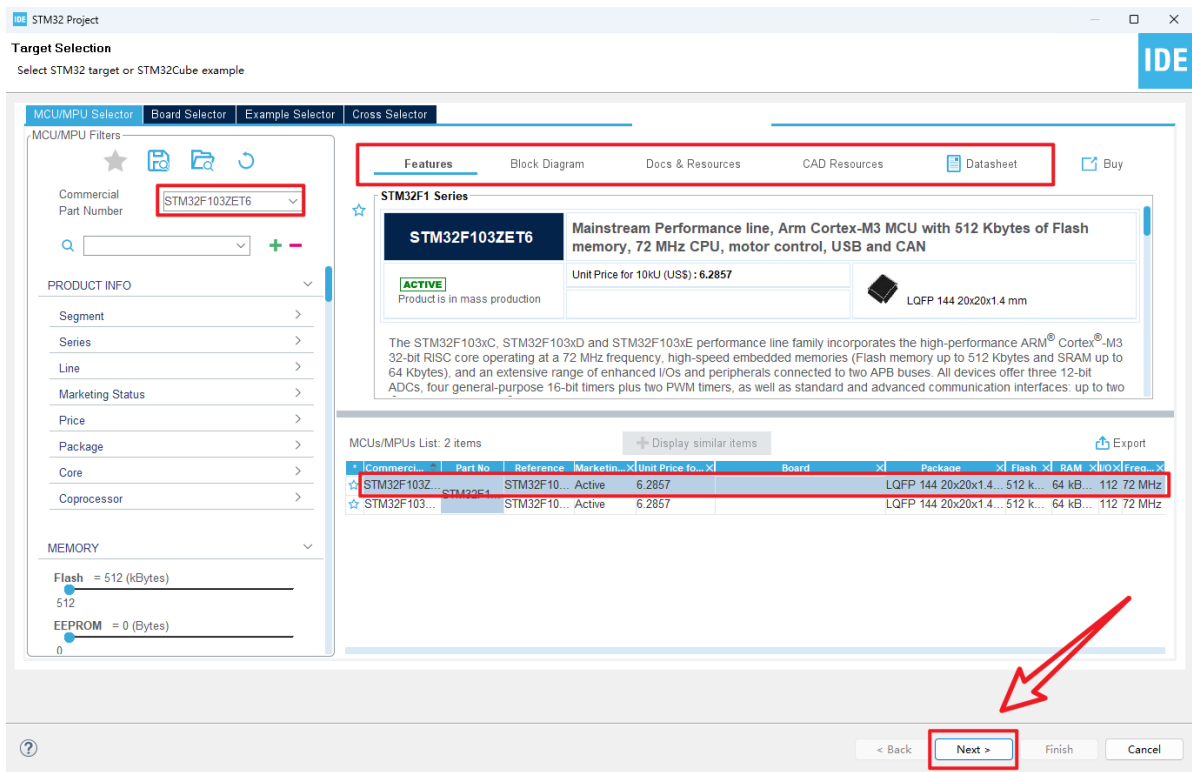
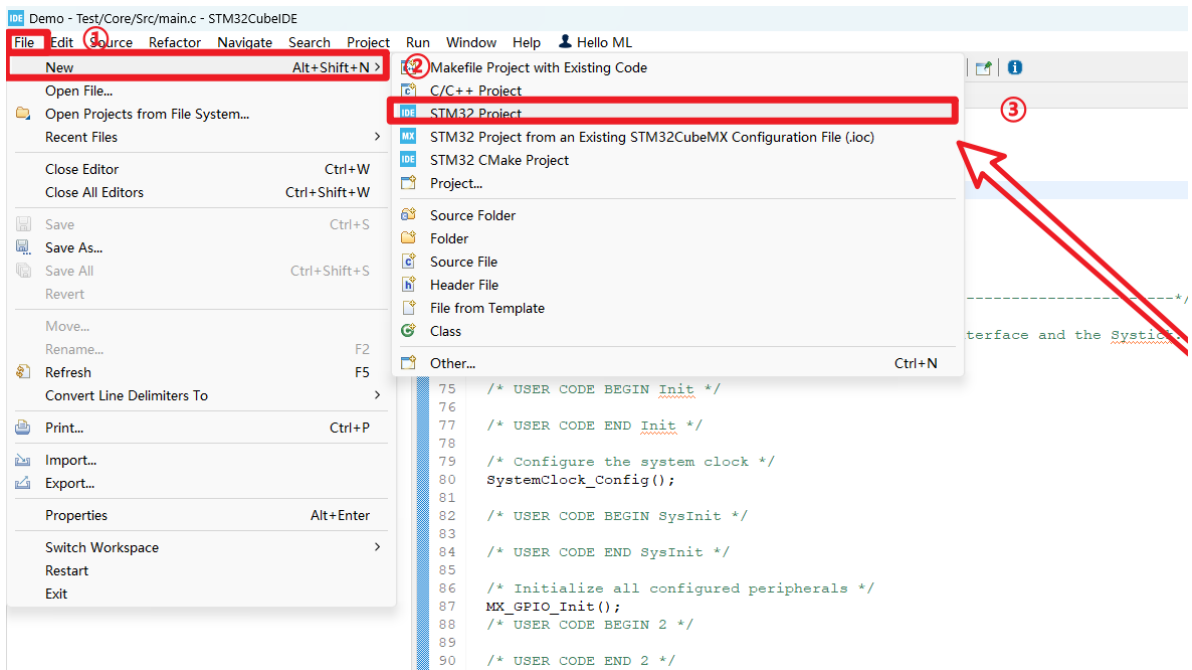
4.8、 Writing the code

USER CODE must be located between USER CODE BEGIN and User code END, otherwise the next time you use the STM32CubeMX peripheral configuration feature it will remove code outside that location.

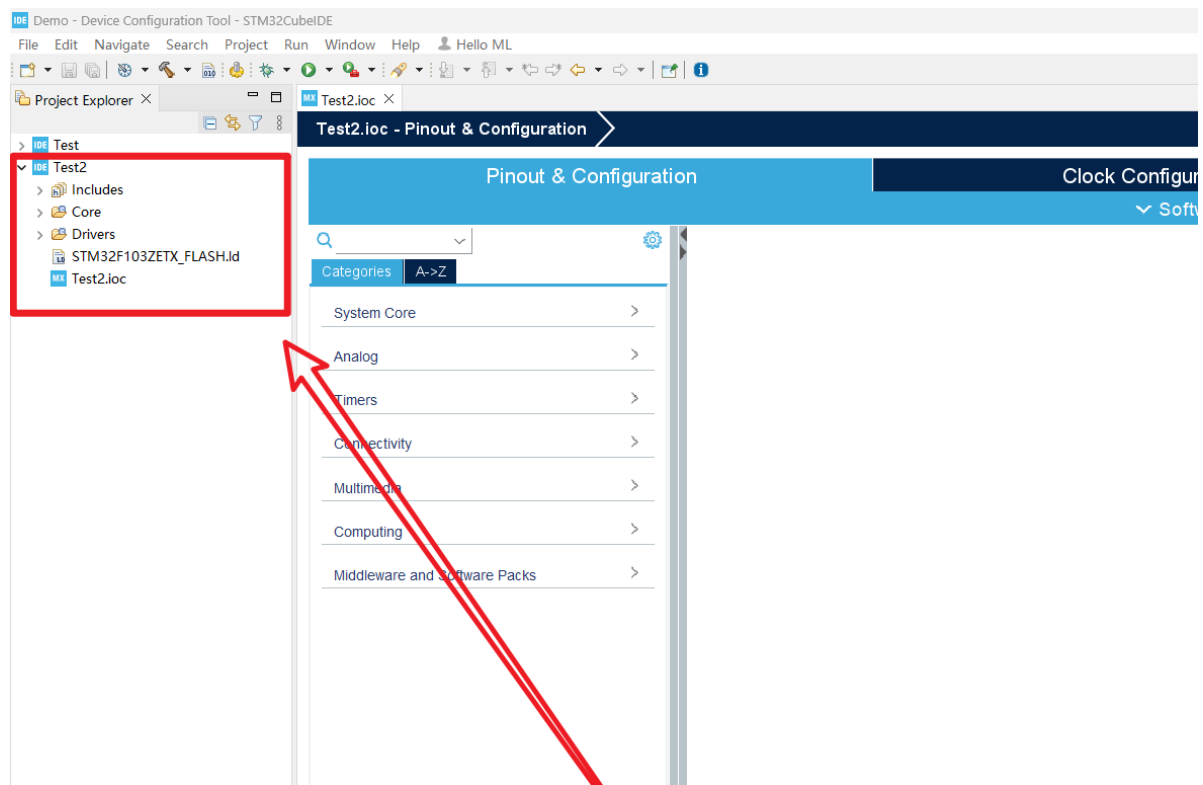
```
62  * @retval int
63  */
64  int main(void)
65  {
66      /* USER CODE BEGIN 1 */
67
68      /* USER CODE END 1 */
69
70      /* MCU Configuration-----*/
71
72      /* Reset of all peripherals, Initializes the Flash interface and the Systick. */
73      HAL_Init();
74
75      /* USER CODE BEGIN Init */
76
77      /* USER CODE END Init */
78
79      /* Configure the system clock */
80      SystemClock_Config();
81
82      /* USER CODE BEGIN SysInit */
83
84      /* USER CODE END SysInit */
85
86      /* Initialize all configured peripherals */
87      MX_GPIO_Init();
88      /* USER CODE BEGIN 2 */
89
90      /* USER CODE END 2 */
91
92      /* Infinite loop */
93      /* USER CODE BEGIN WHILE */
```

4.9、 New construction again

Demonstrate how to create a new project in the project file, which is often used in real development



The project file management area will appear for the new project



Refer to the previous steps for the next steps.

5、Q&A

5.1、Encoding format problem

Tip: Project '***' has no explicit encoding set

solution: Change the file encoding → UTF-8

