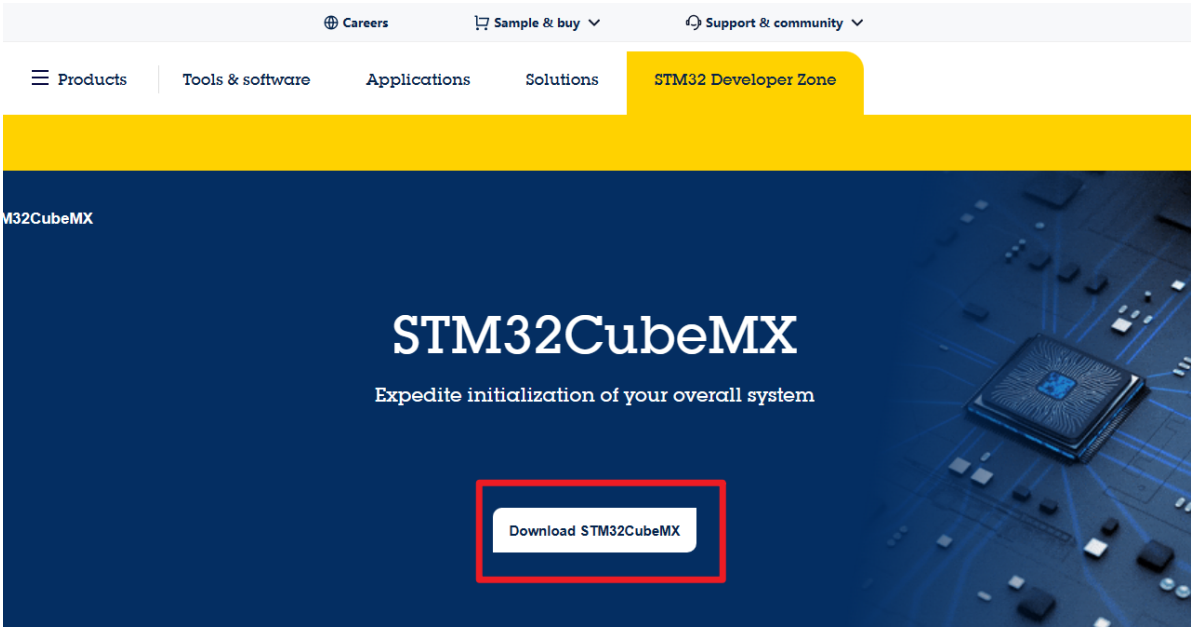
STM32CubeMX installation

1、Software download

The development tool used for the tutorial is the STM32CubeIDE software，STM32CubeMX is integrated in the STM32CubeIDE software, so learning STM32CubeMX is beneficial to understand the STM32CubeIDE graphical configuration interface.

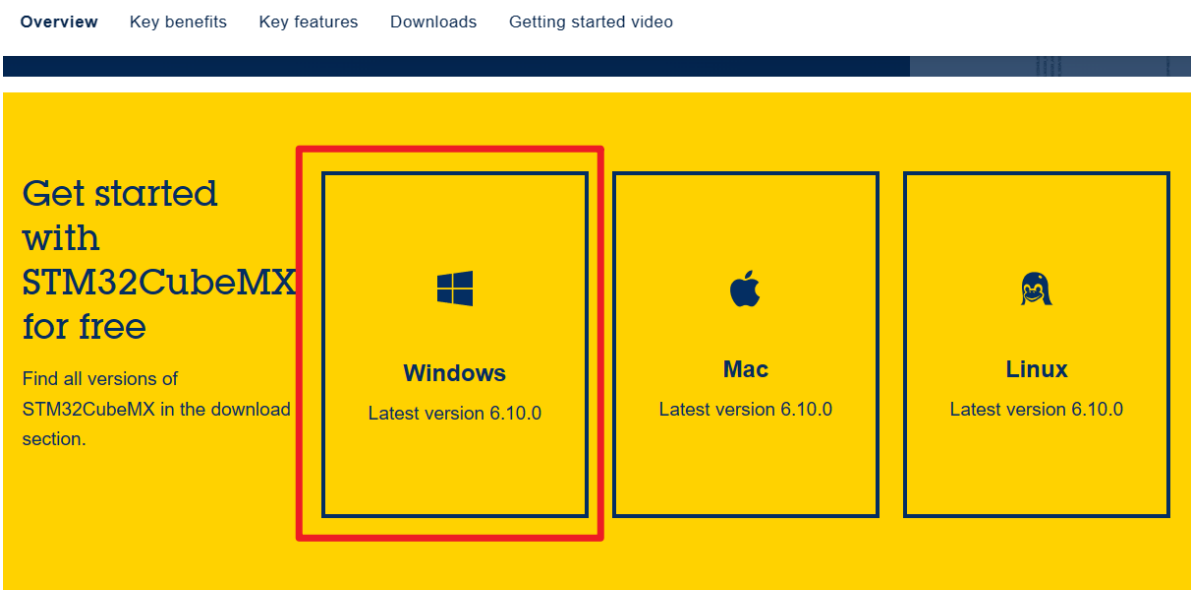
1.1、Download URL

ST Official website：https://www.st.com/content/st_com/en/stm32cubemx.html



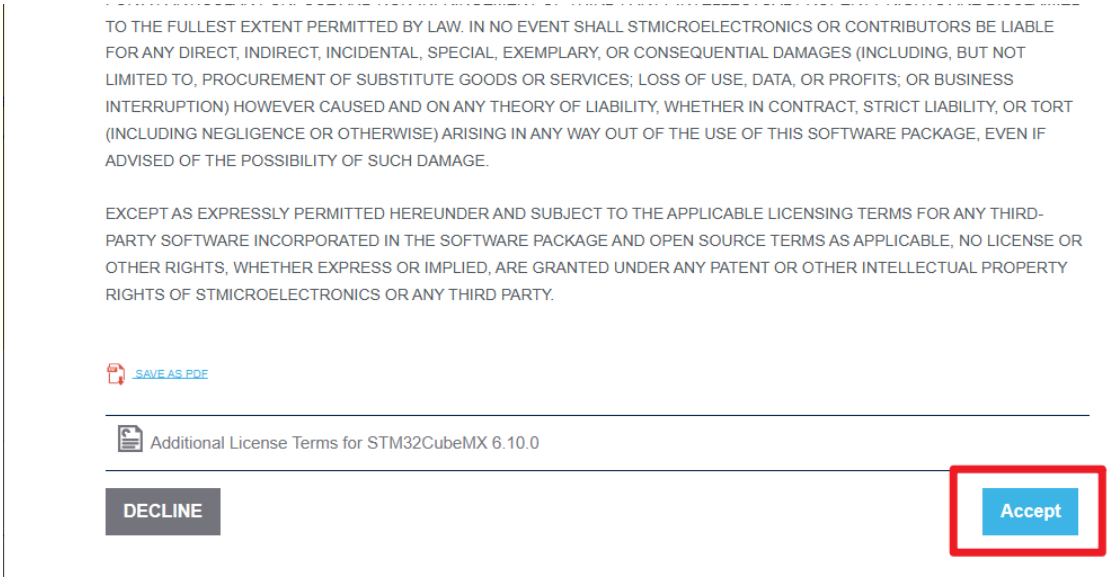
1.2、Choosing a platform

- **platform**：Windows

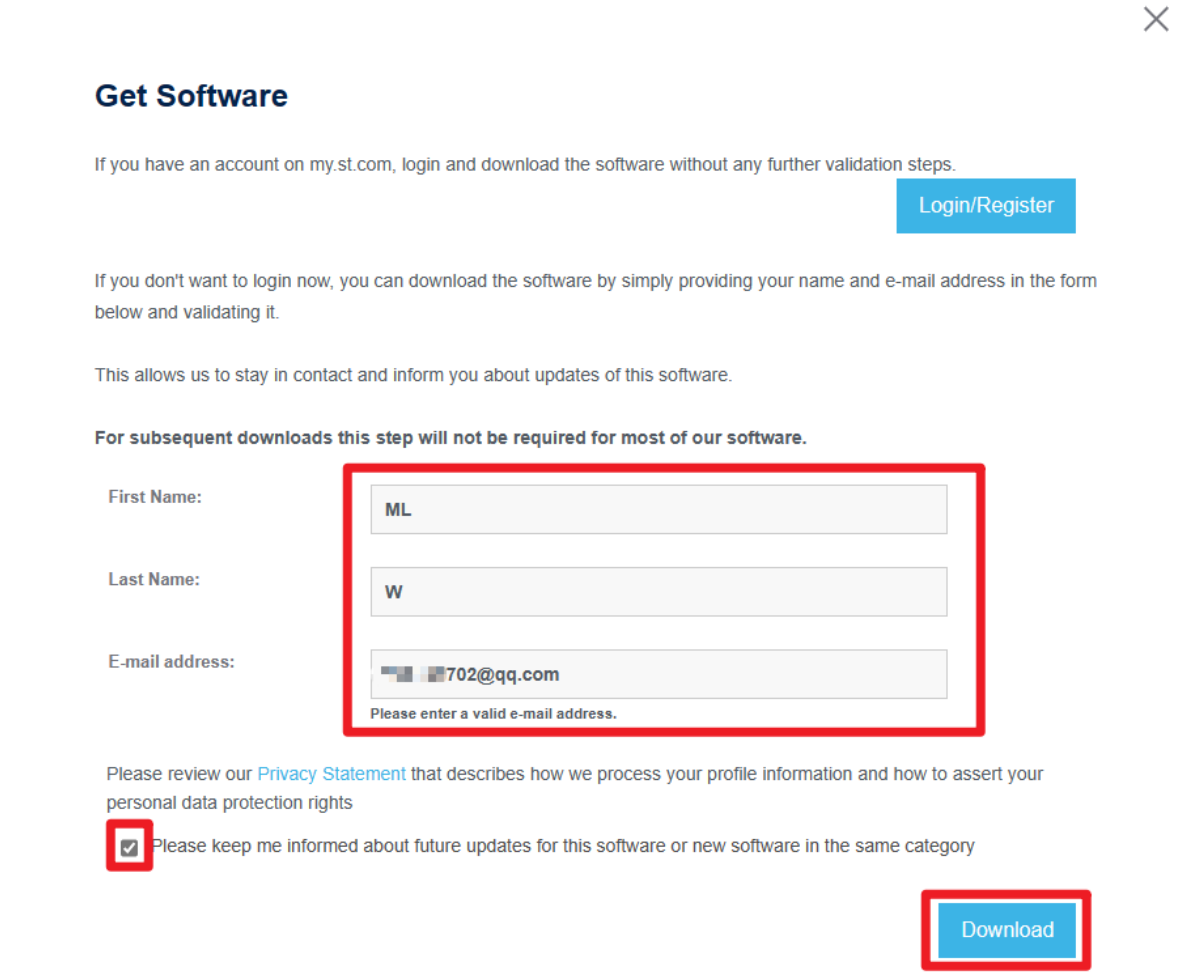


1.3、Filling in information

- **Agree to the agreement**

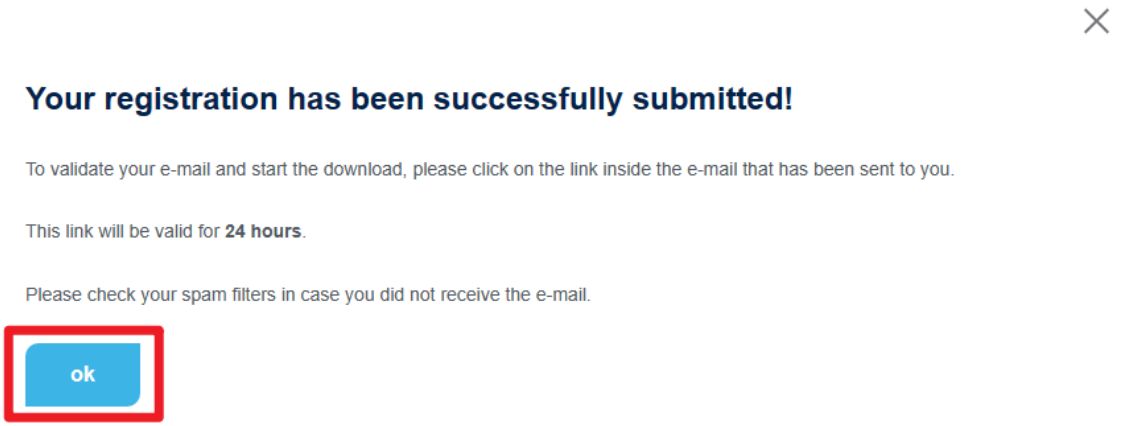


- **Filling in information**

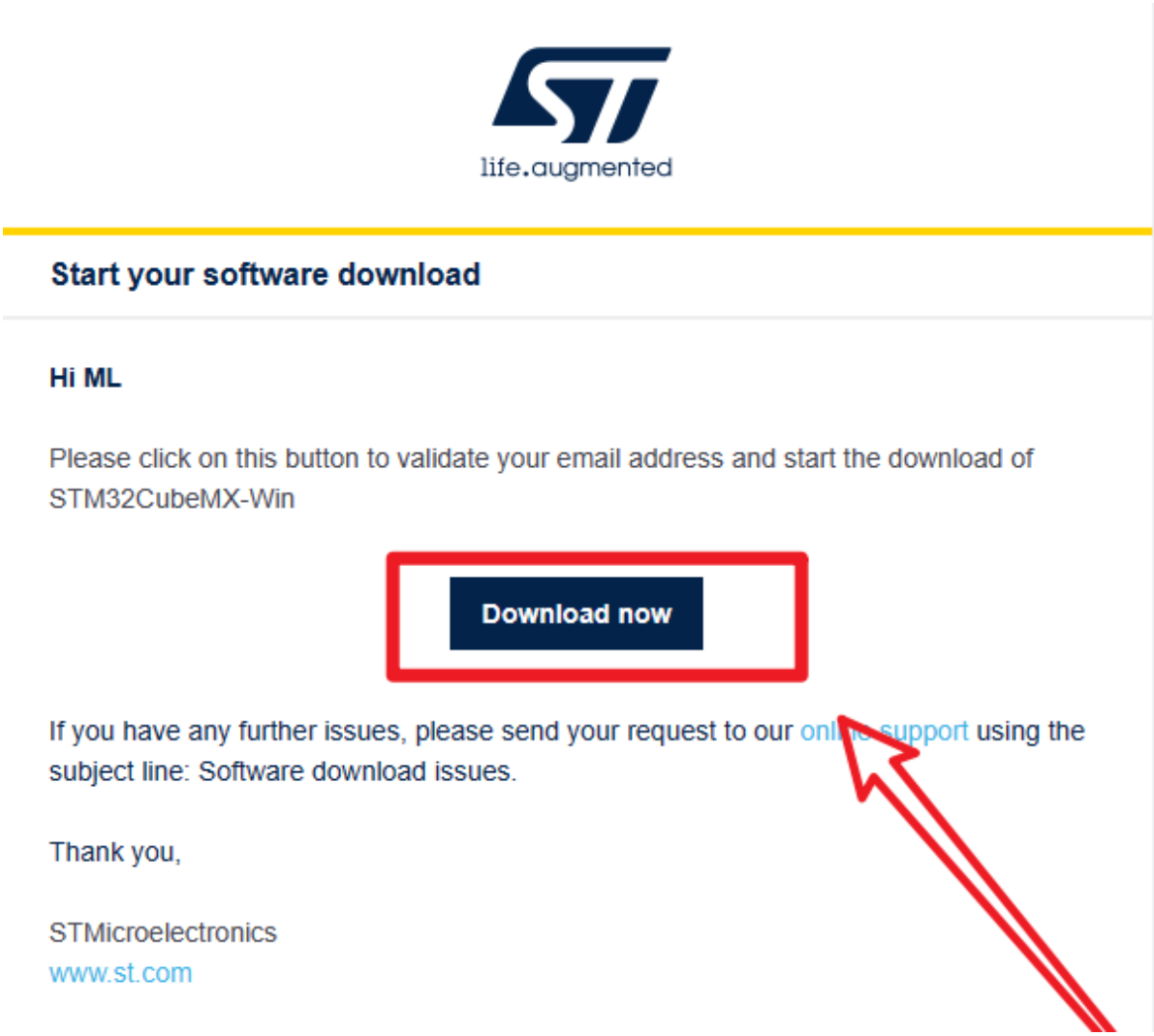



```
The email address needs to be filled in accurately, and the software download
link will be sent to you by email
```

- **Complete submission**



- **Email to download the installer**



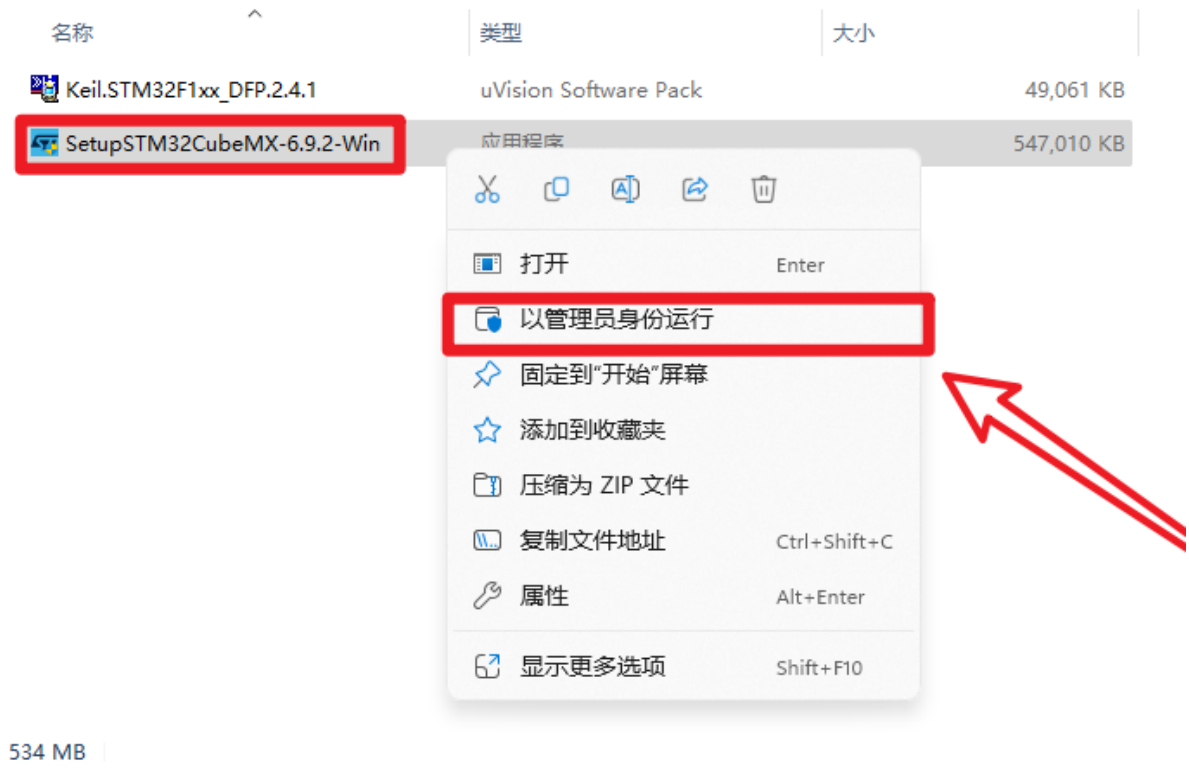

```
Click on the link to go to the official website, the website will automatically jump out of the software compressed package download window
```

2、Software Installation

2.1、Open the installer

- **Administrator**

Open the installation package as an administrator



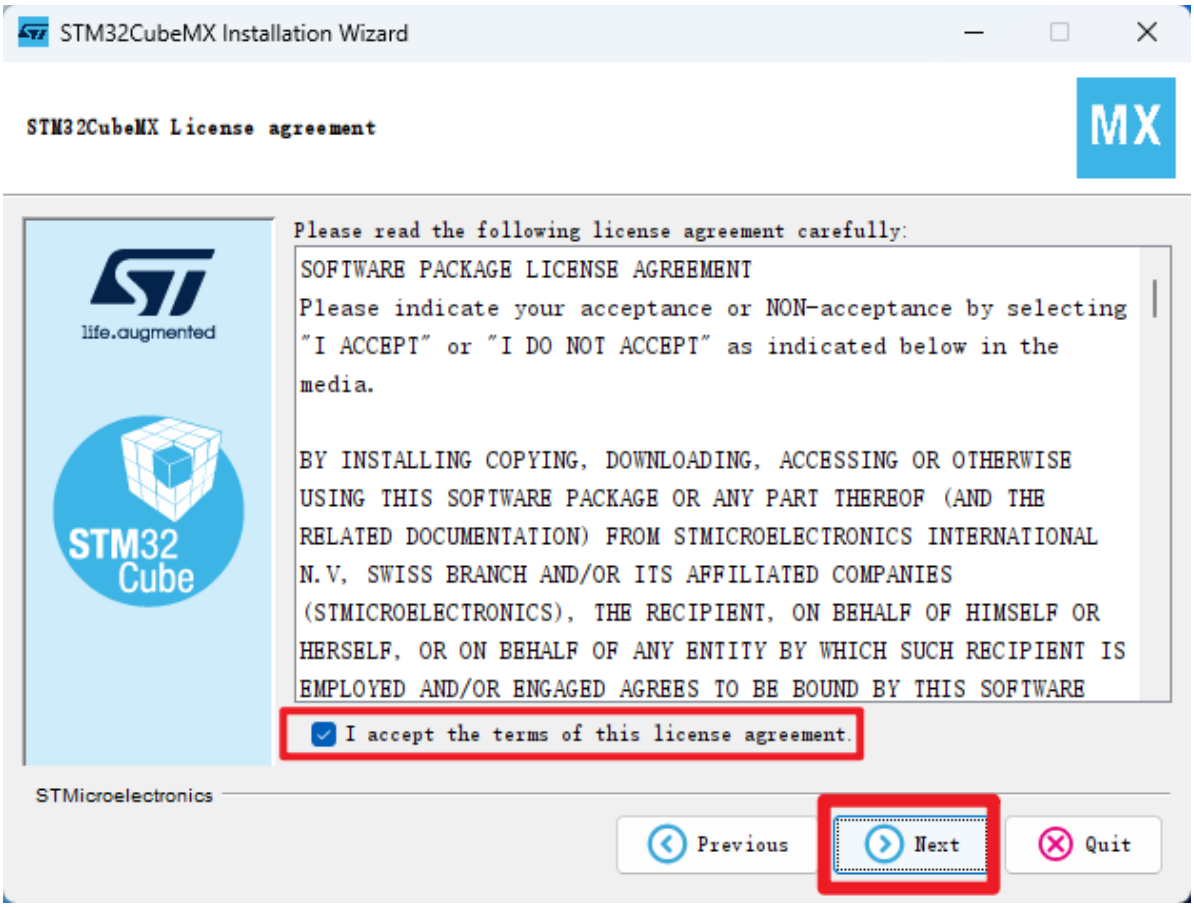
534 MB

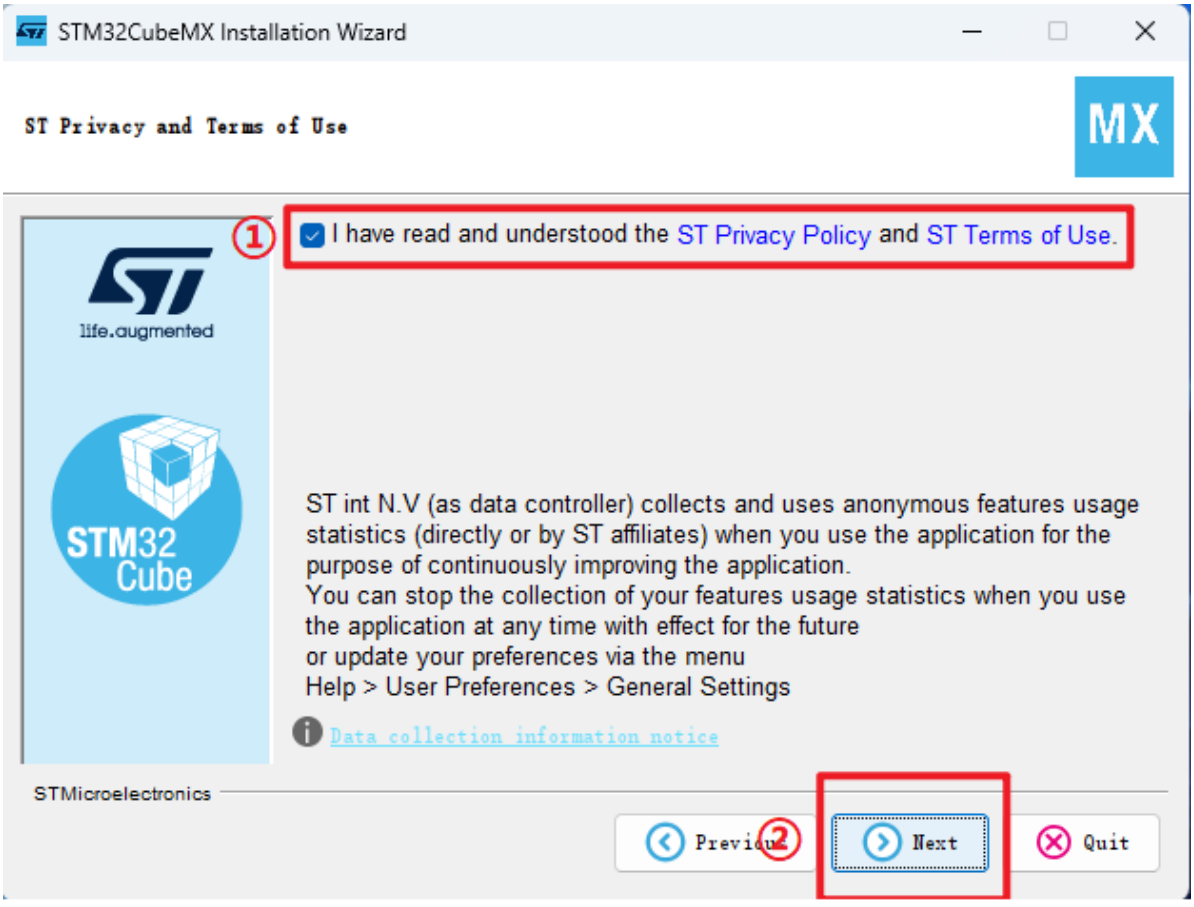
```
If you open the software installation package, then you see "NSIS ERROR: error launching installer" error:

Please put the package in the path without Chinese characters
```

2.2、Installation Process - Setup

- **Next**

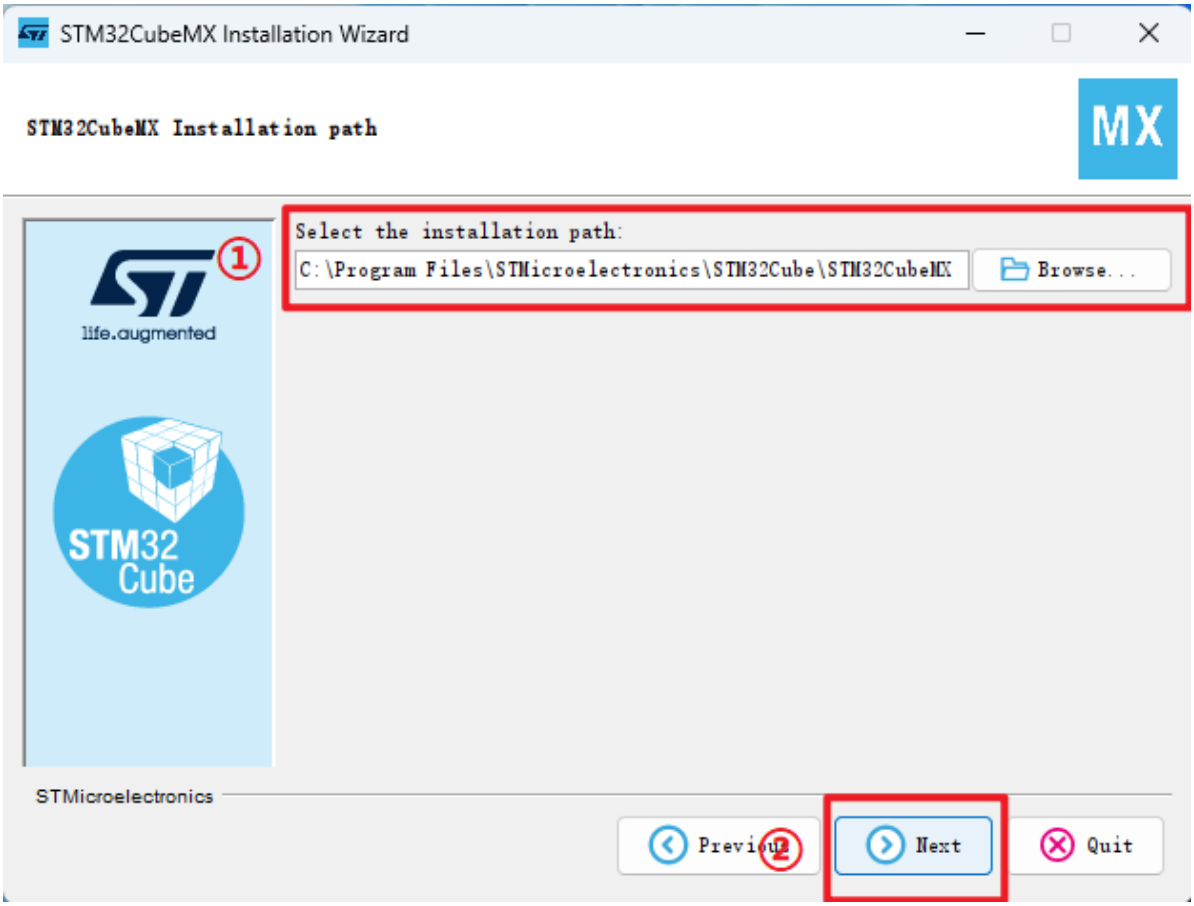
- **Check the Agreement and Privacy Policy→ Next**

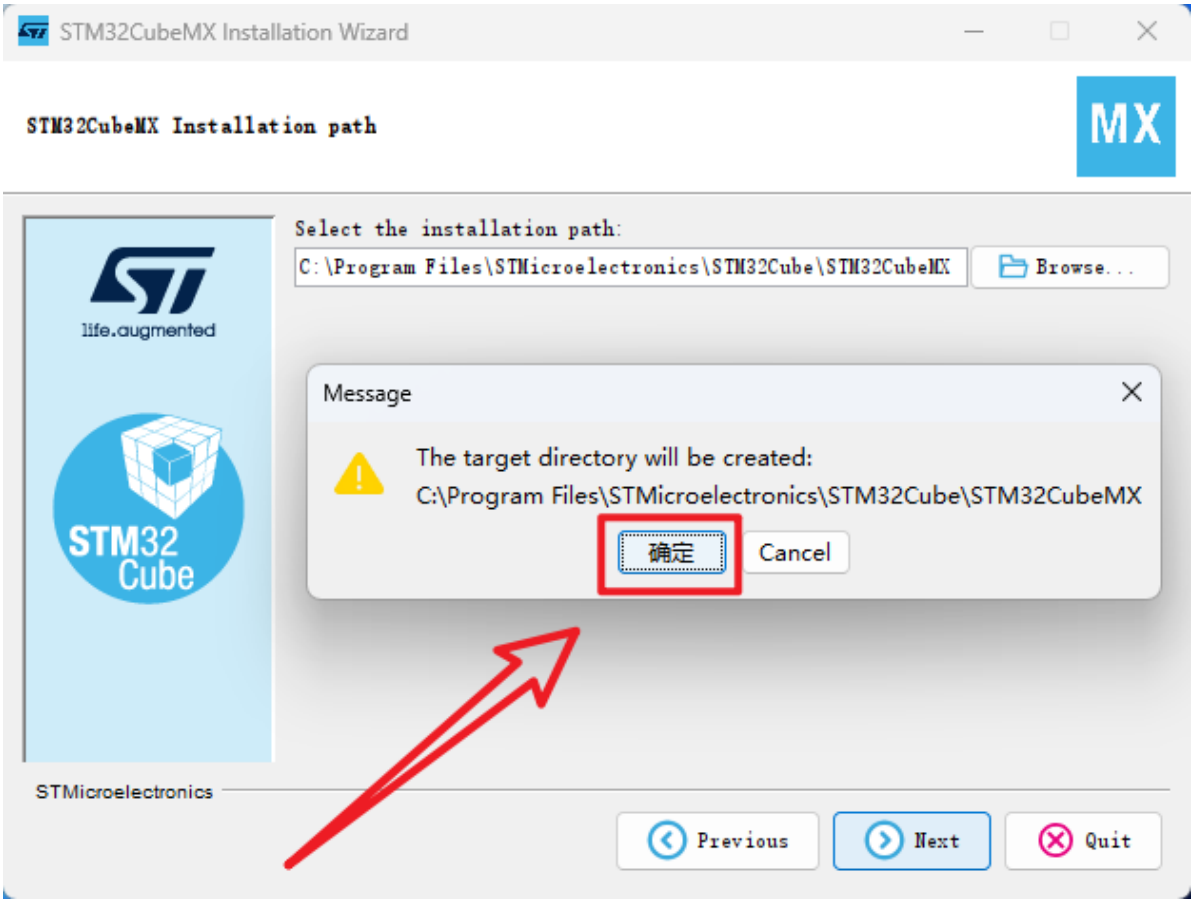


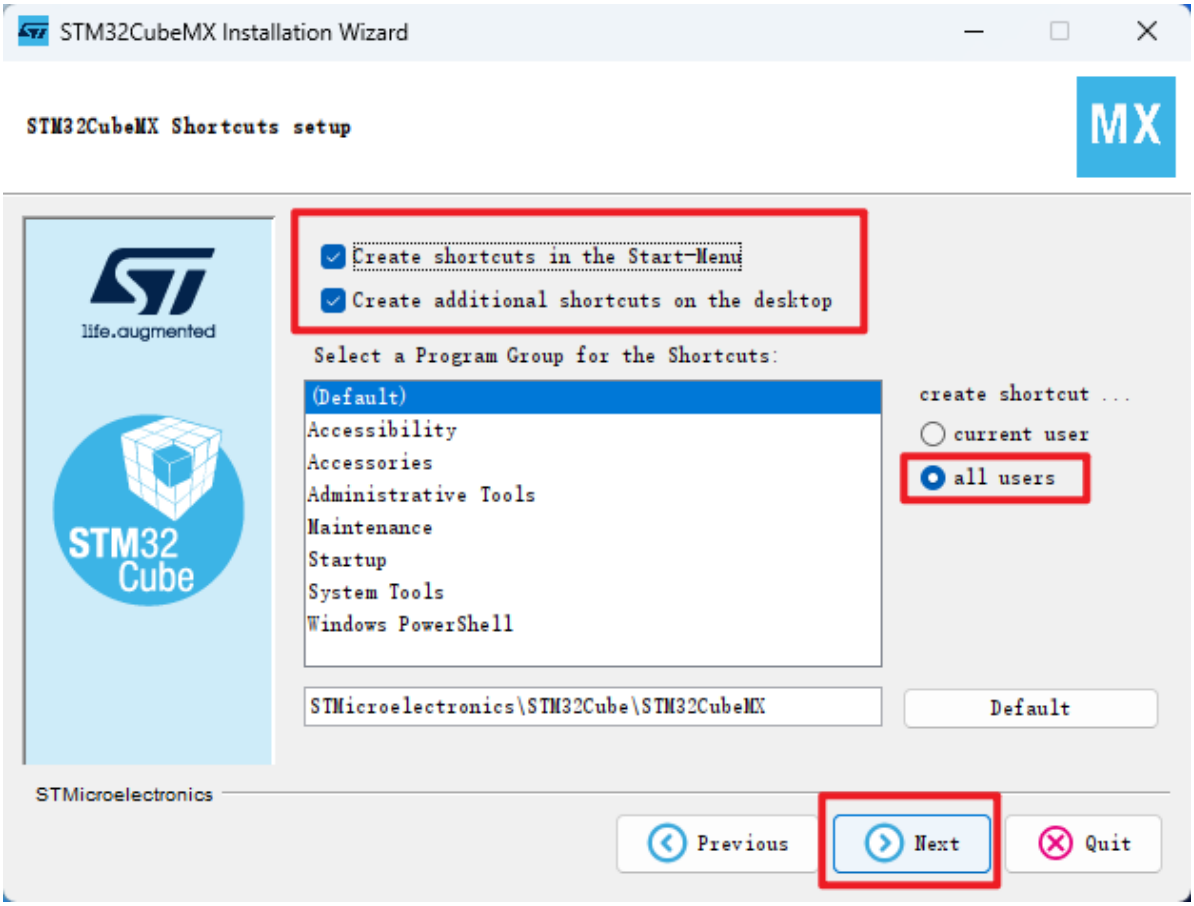


- **Location of installation → Next**

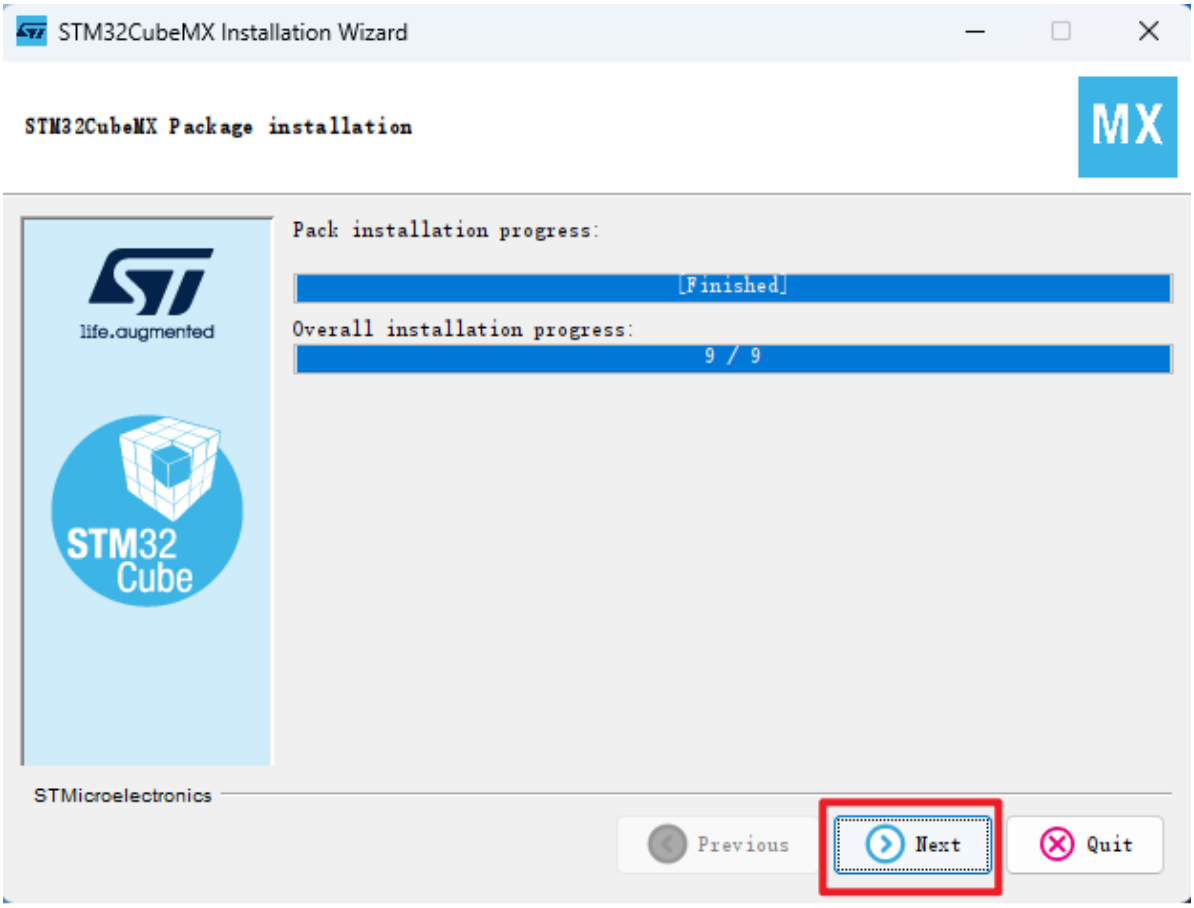
```
The following are recommended to use the default installation location of the
software and the path does not contain Chinese characters
```


STM32CubeMX Installation Wizard
STM32CubeMX Installation path
MX
Select the installation path:
C:\Program Files\STMicroelectronics\STM32Cube\STM32CubeMX
Browse...
1
life.augmented
STM32 Cube
STMicroelectronics
Previous
2
Next
Quit

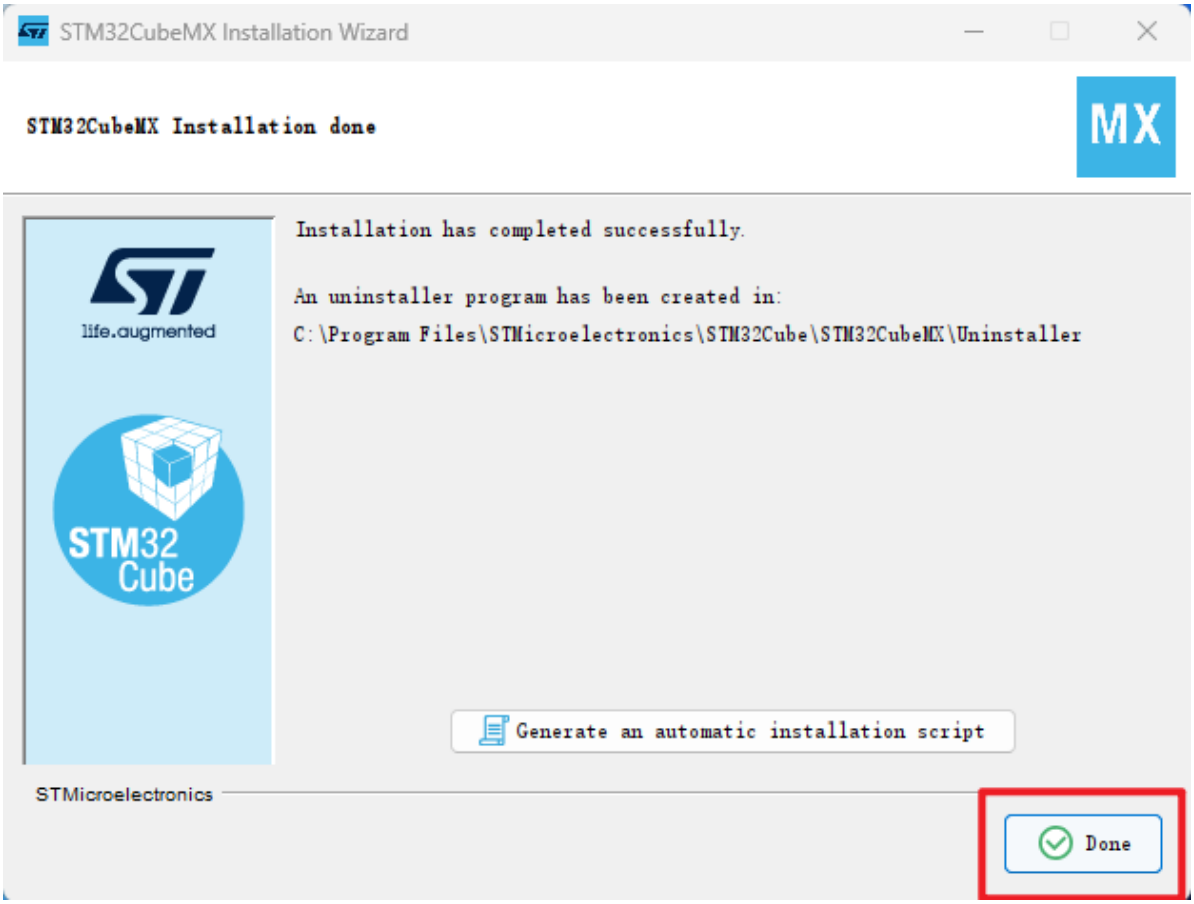

STM32CubeMX Installation Wizard
STM32CubeMX Installation path
MX
Select the installation path:
C:\Program Files\STMicroelectronics\STM32Cube\STM32CubeMX
Browse...
life.augmented
STM32 Cube
Message
The target directory will be created:
C:\Program Files\STMicroelectronics\STM32Cube\STM32CubeMX
确定
Cancel
STMicroelectronics
Previous
Next
Quit



- **Waiting for installation → Next**



- **Installation Completed**



3、Software configuration

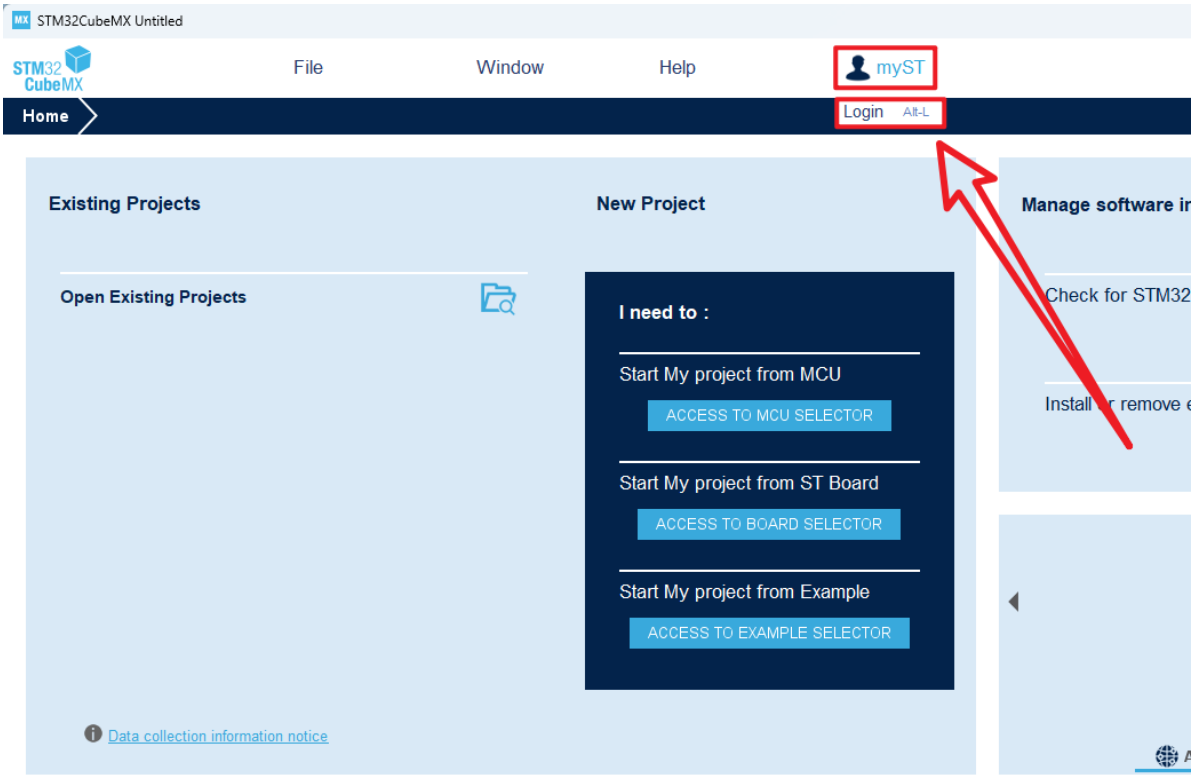
Familiar with software options and functions.

3.1、Open the application

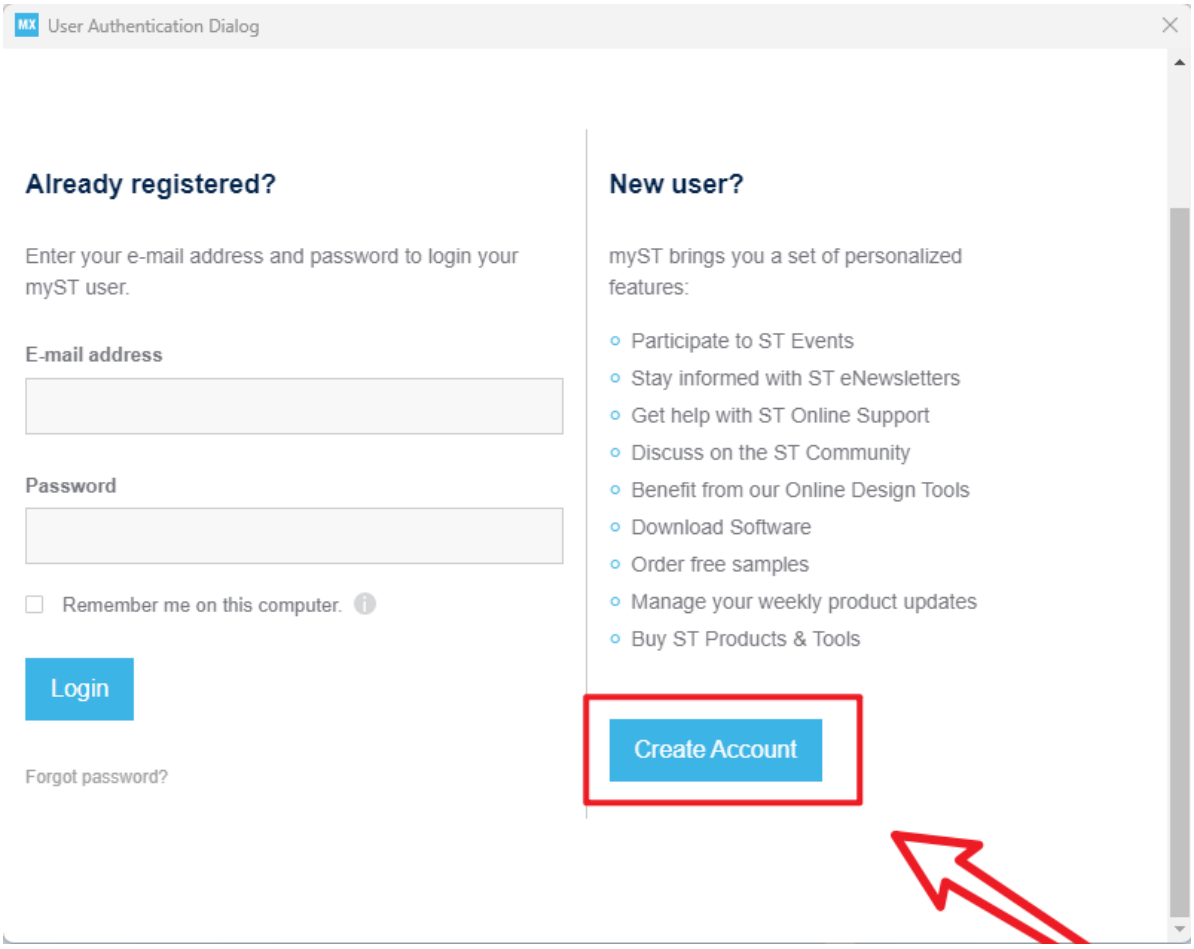
- **Click on Left mouse button**：Double click the desktop "STM32CubeMX" app

3.2、Sign-up - Login to your account

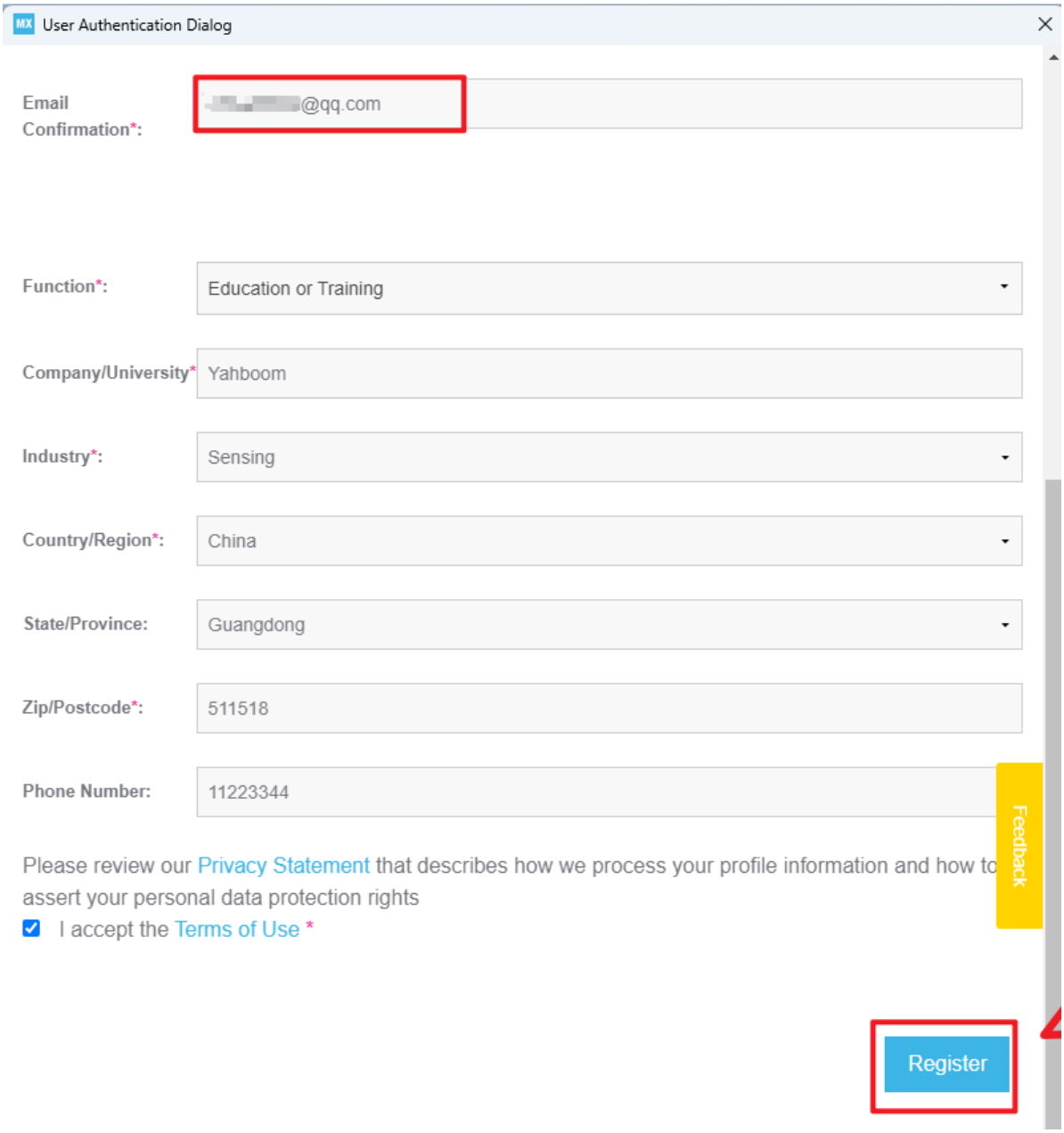
Unable to download firmware package without login account.



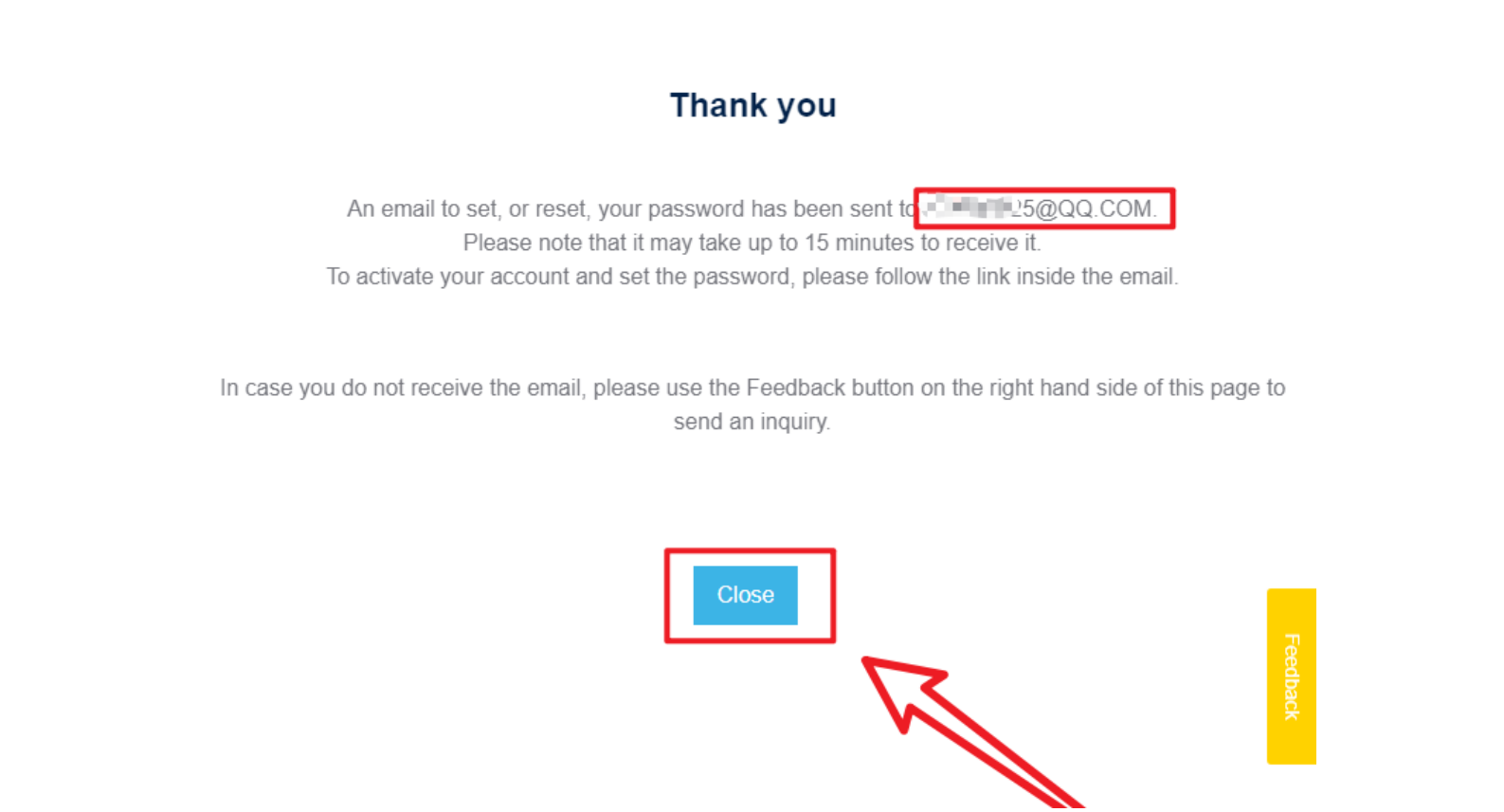
- **Create an account**



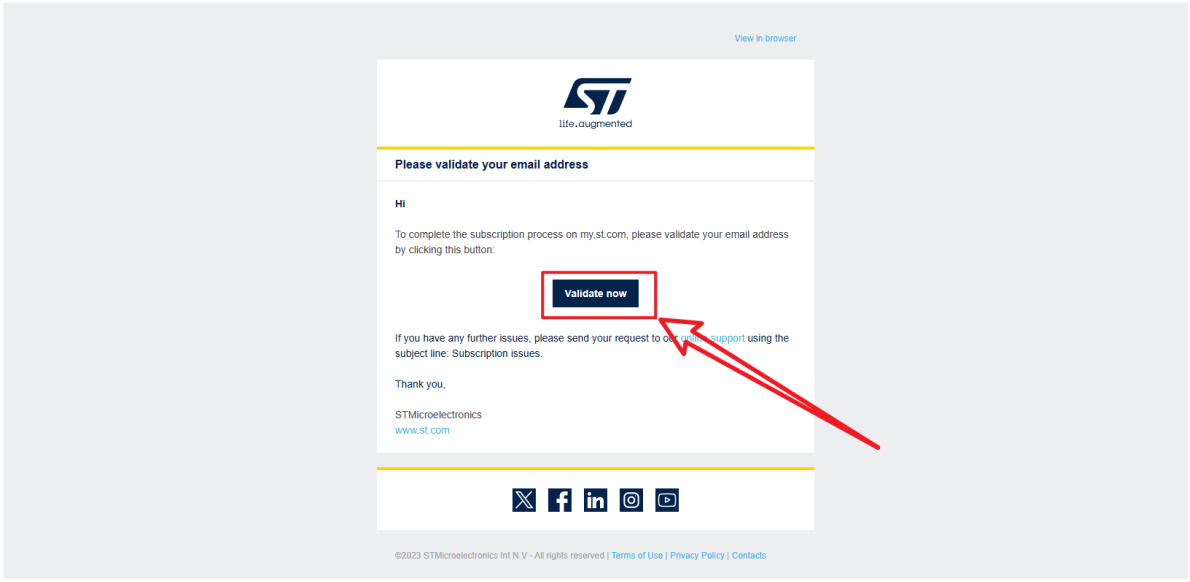
- **Fill in the information and submit it**



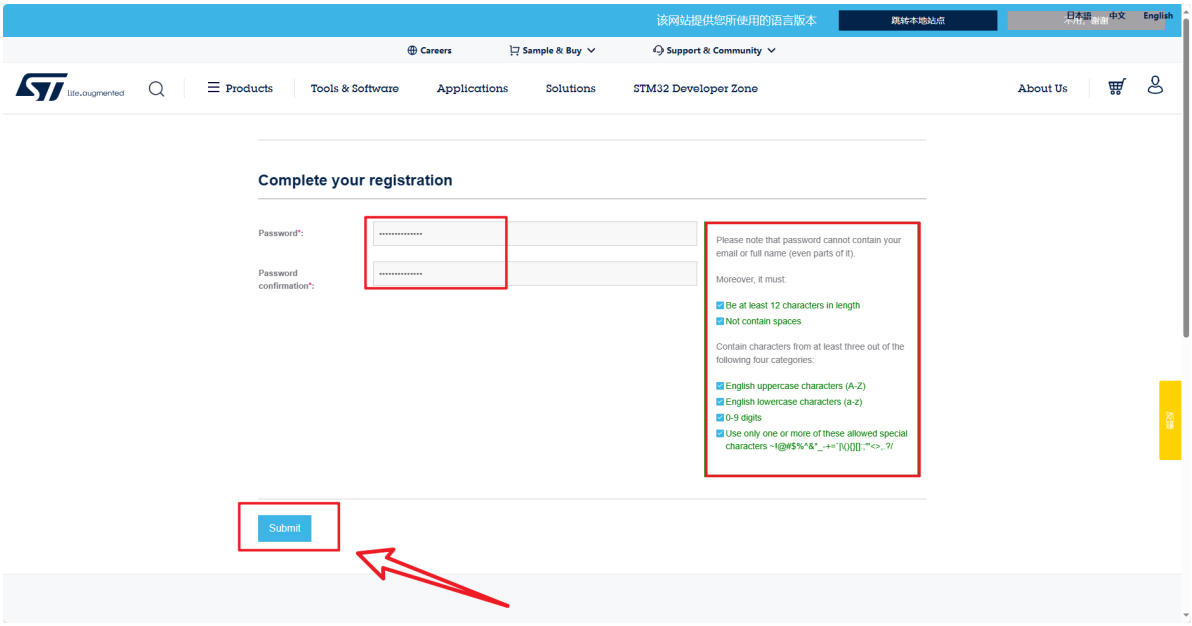

```
Email information Fill in accurate information
```



- **Verify email**



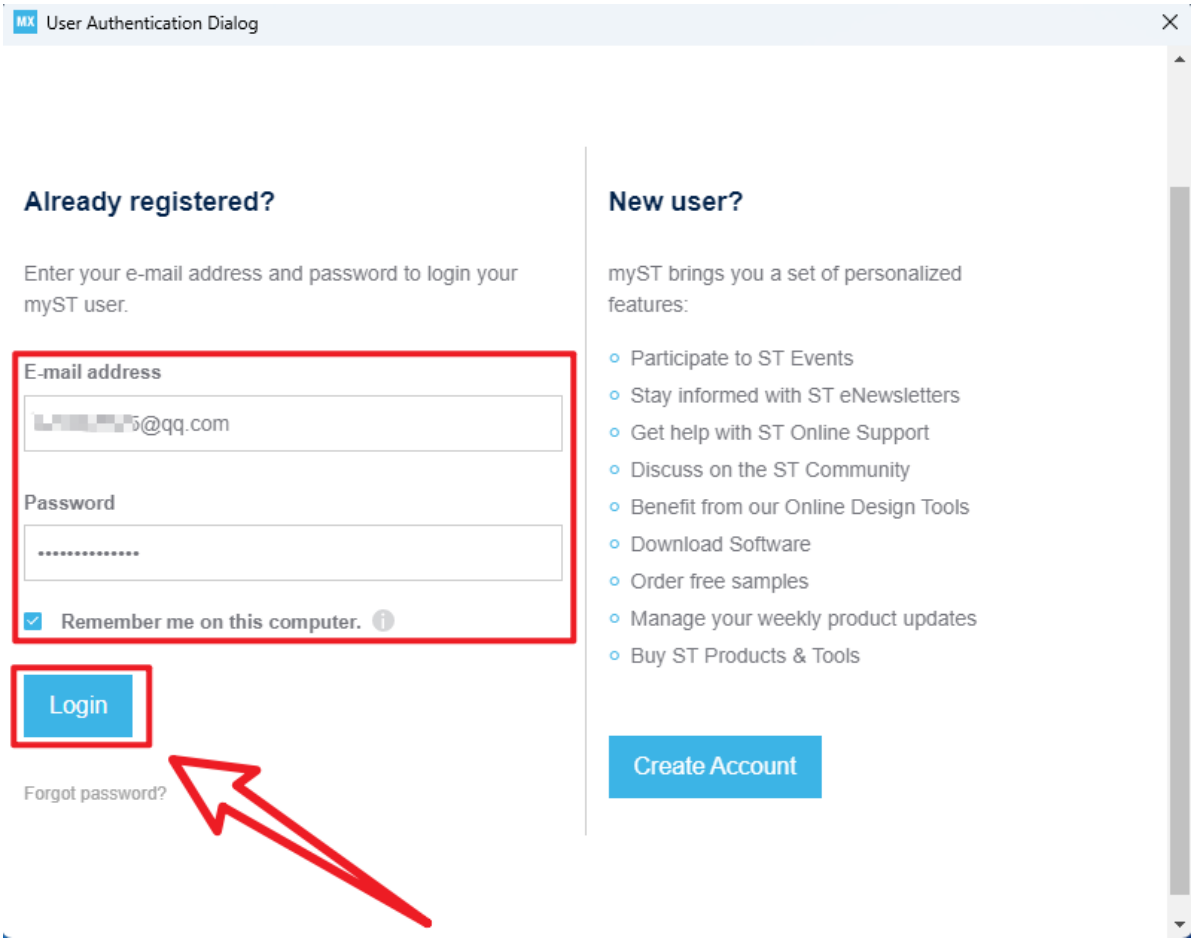
- **Set a password and submit**

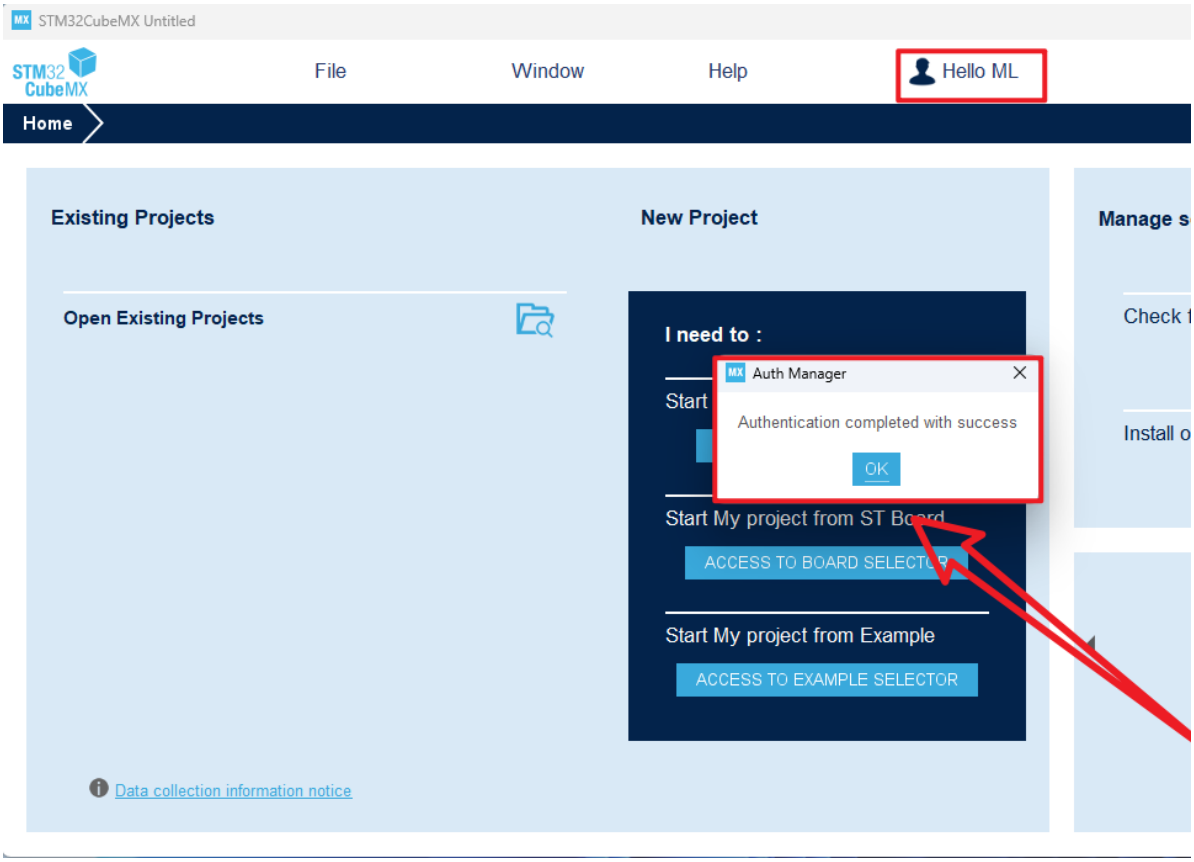


On the right is the password format requirement. Sometimes if the submission is unsuccessful, wait a few minutes or re-enter this page.

- **Login account**

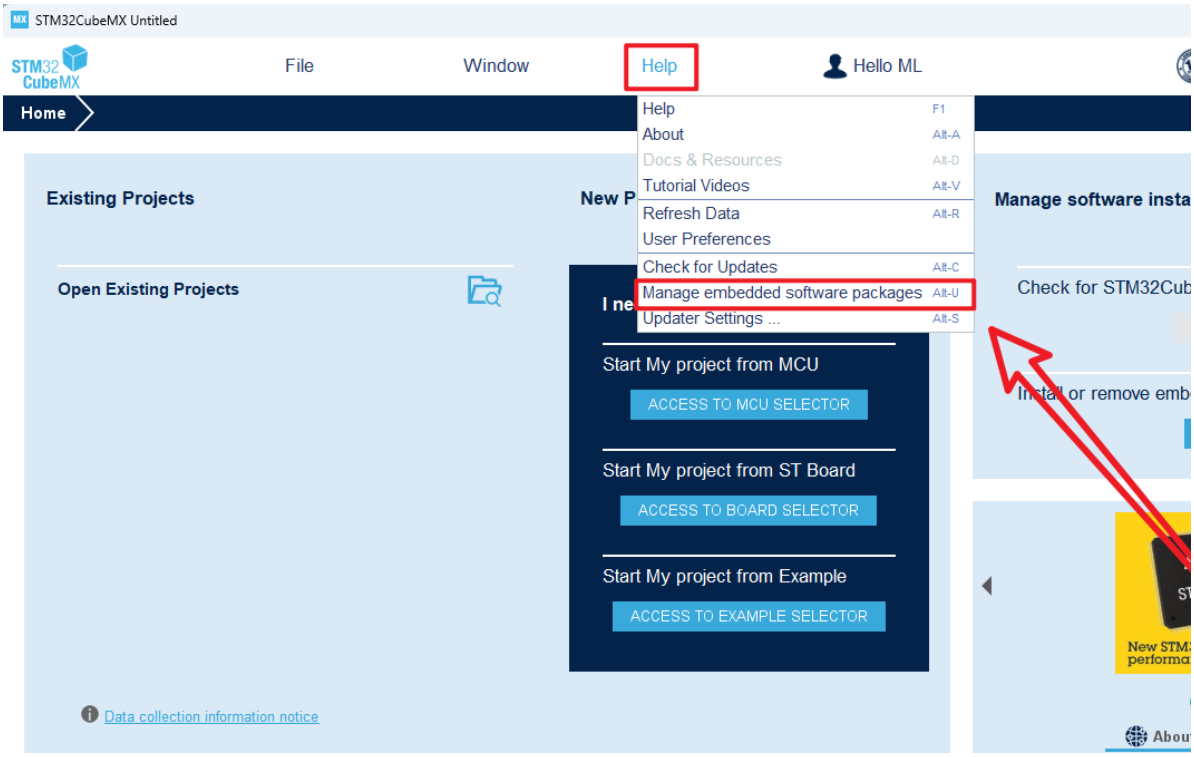
On the right is the password format requirements, sometimes if the submission is not successful, wait a few minutes or re-enter this page



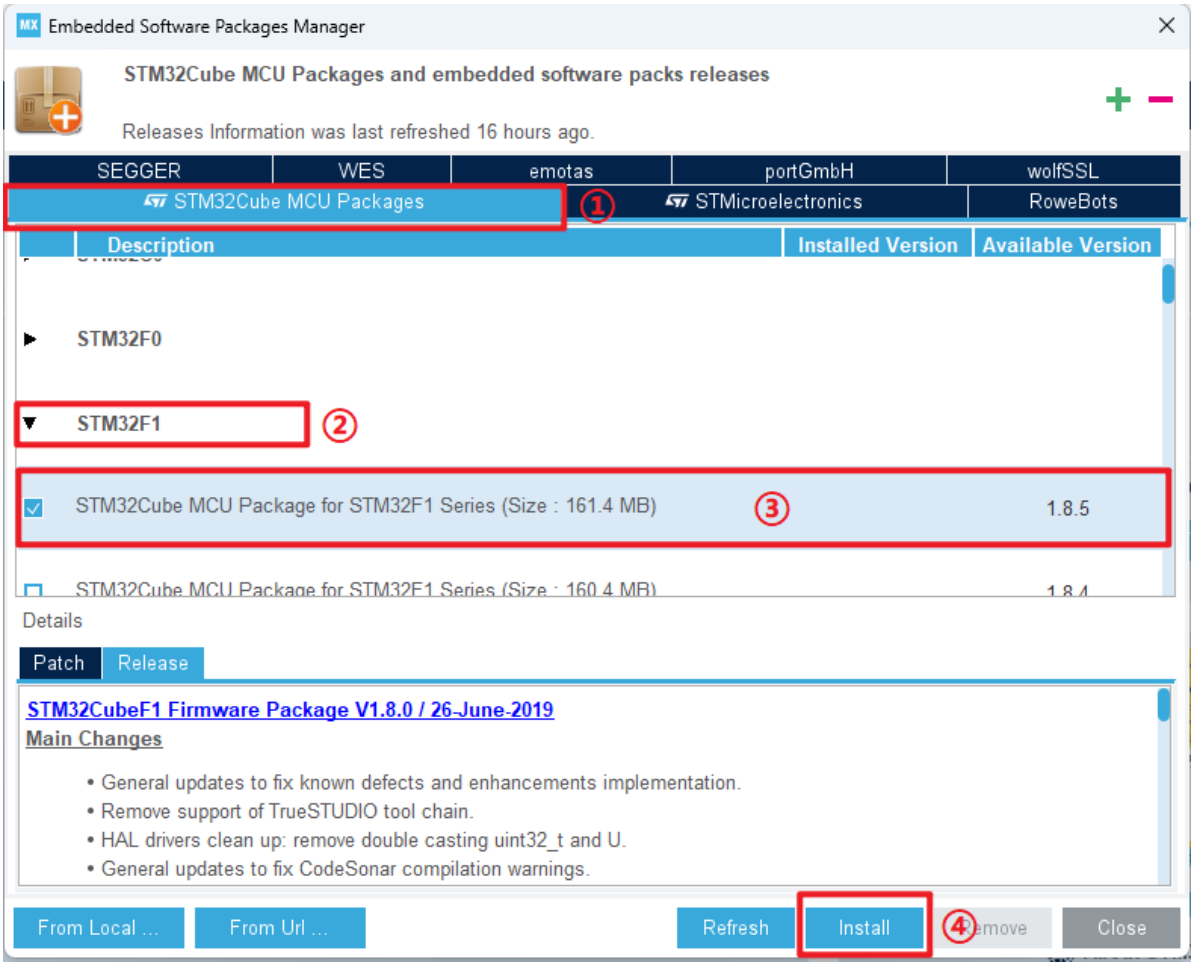


3.3、Installing the firmware package

- **Help → Manage embedded software packages**

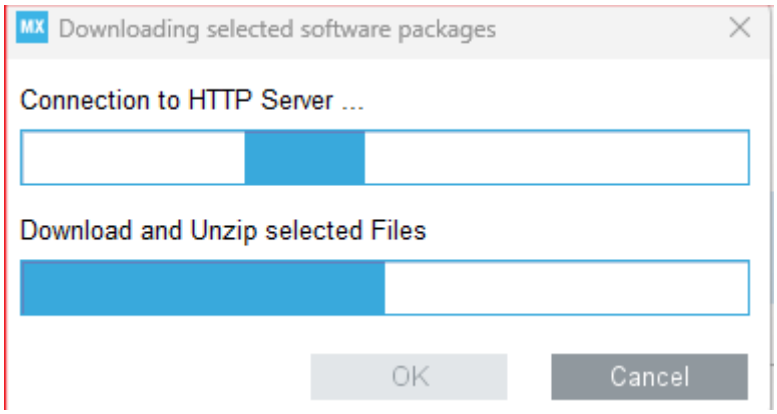


- **Install the latest STM32F1 firmware package**

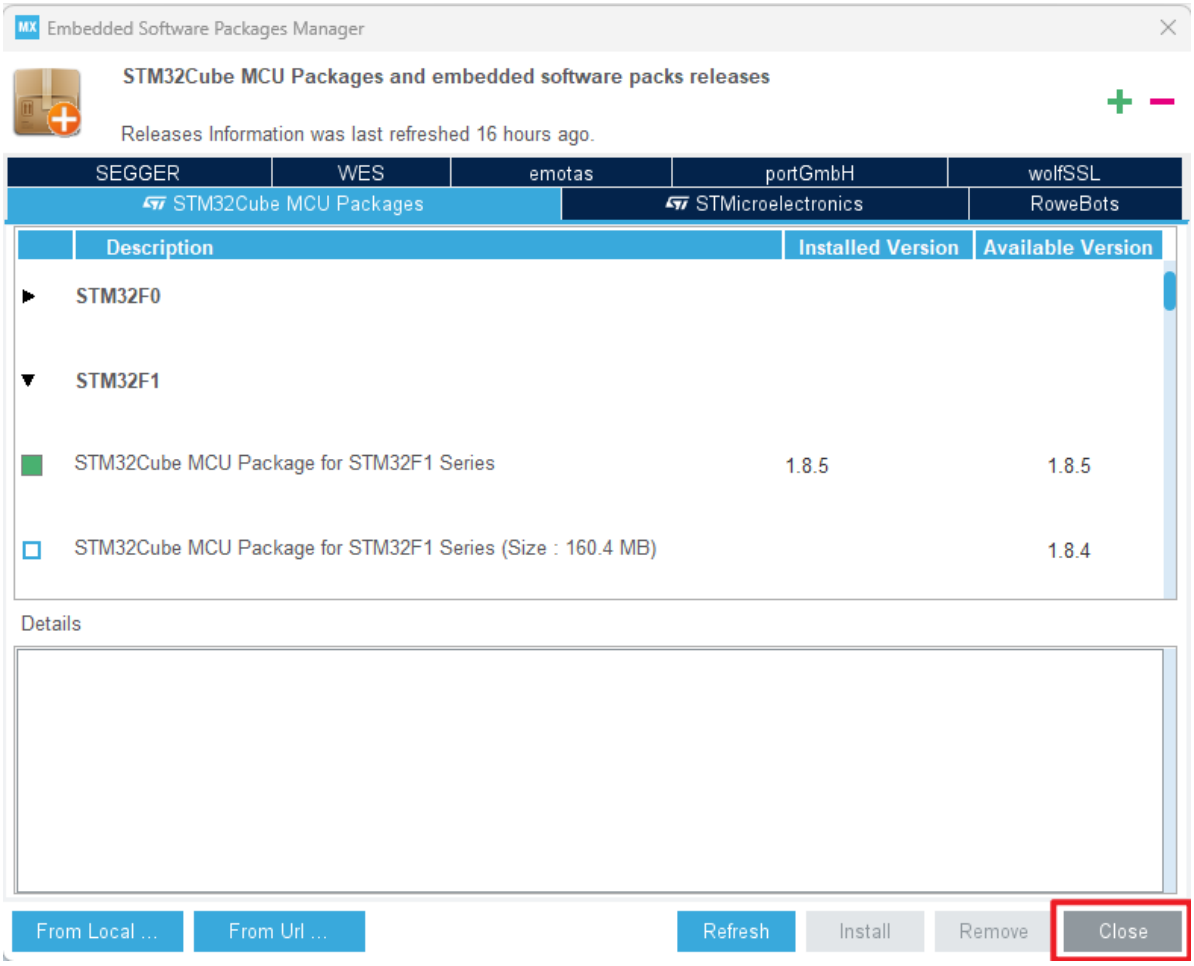



```
Install or uninstall is to check the box in front of the chip firmware package,
click this option will not have install and uninstall options
```

- **Waiting to download**

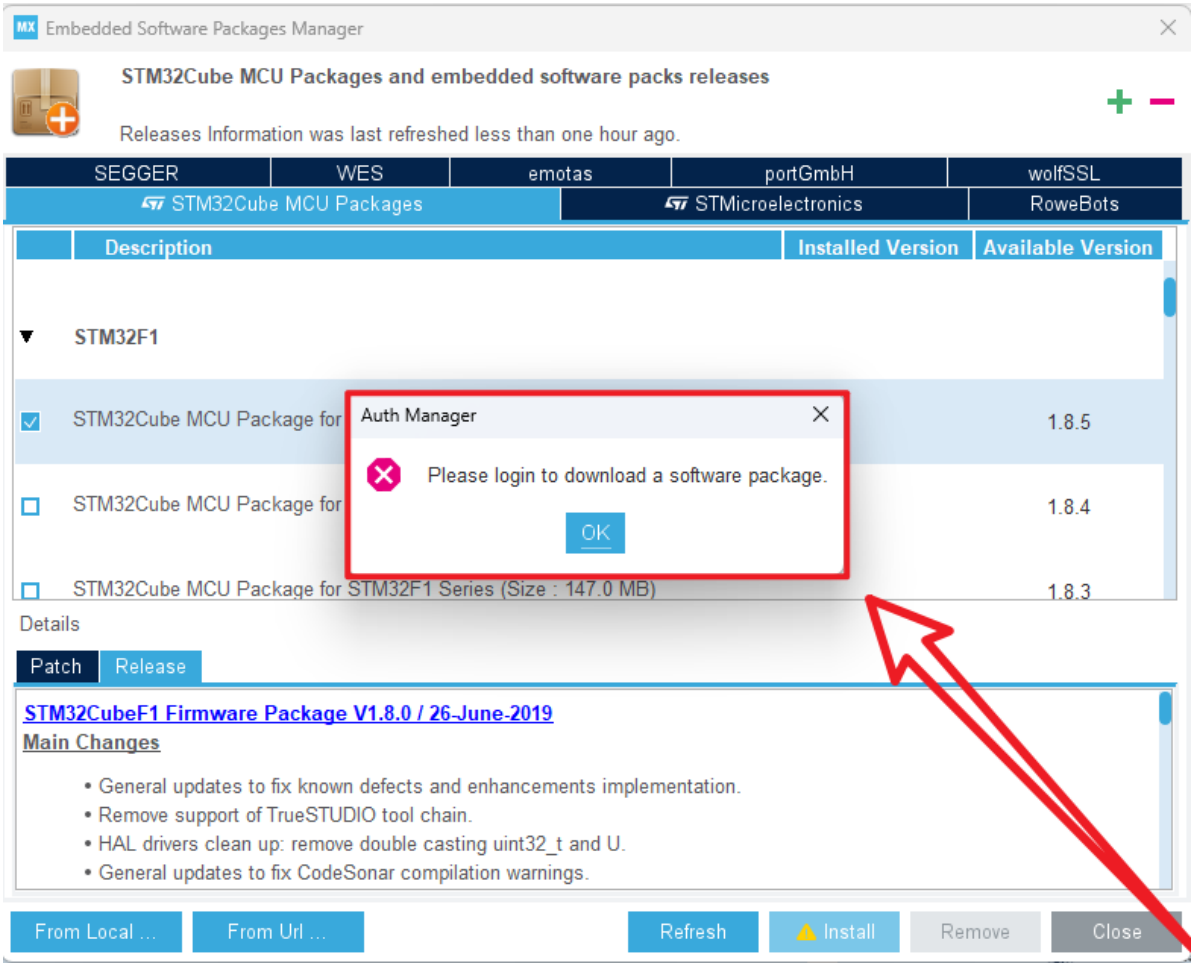


- **Close the screen**



- **Not logged in account prompt**

```
Login to your account before downloading
```



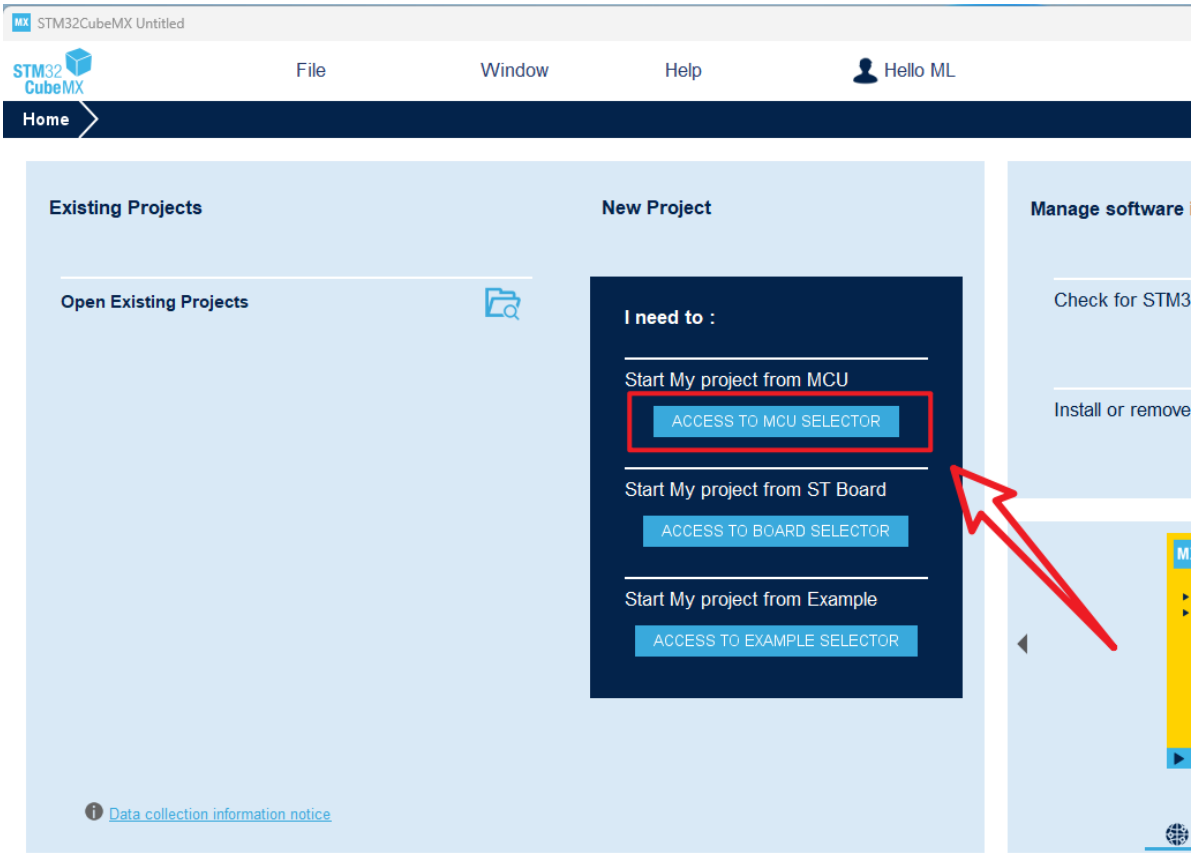
4、Software Usage

Using STM32CubeMX is mainly used for STM32 configuration and initialization code generation.

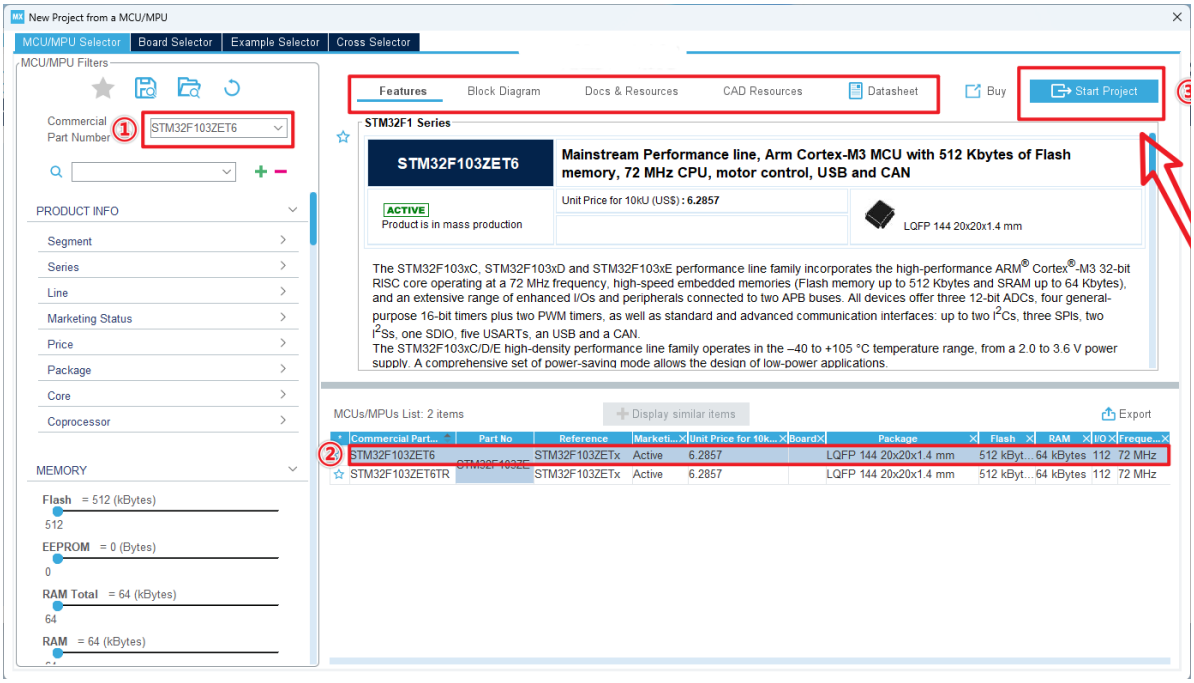
```
This article mainly introduces the common function options, and will not
demonstrate the peripheral driver
```

4.1、Chip selection

- **Chip selection**

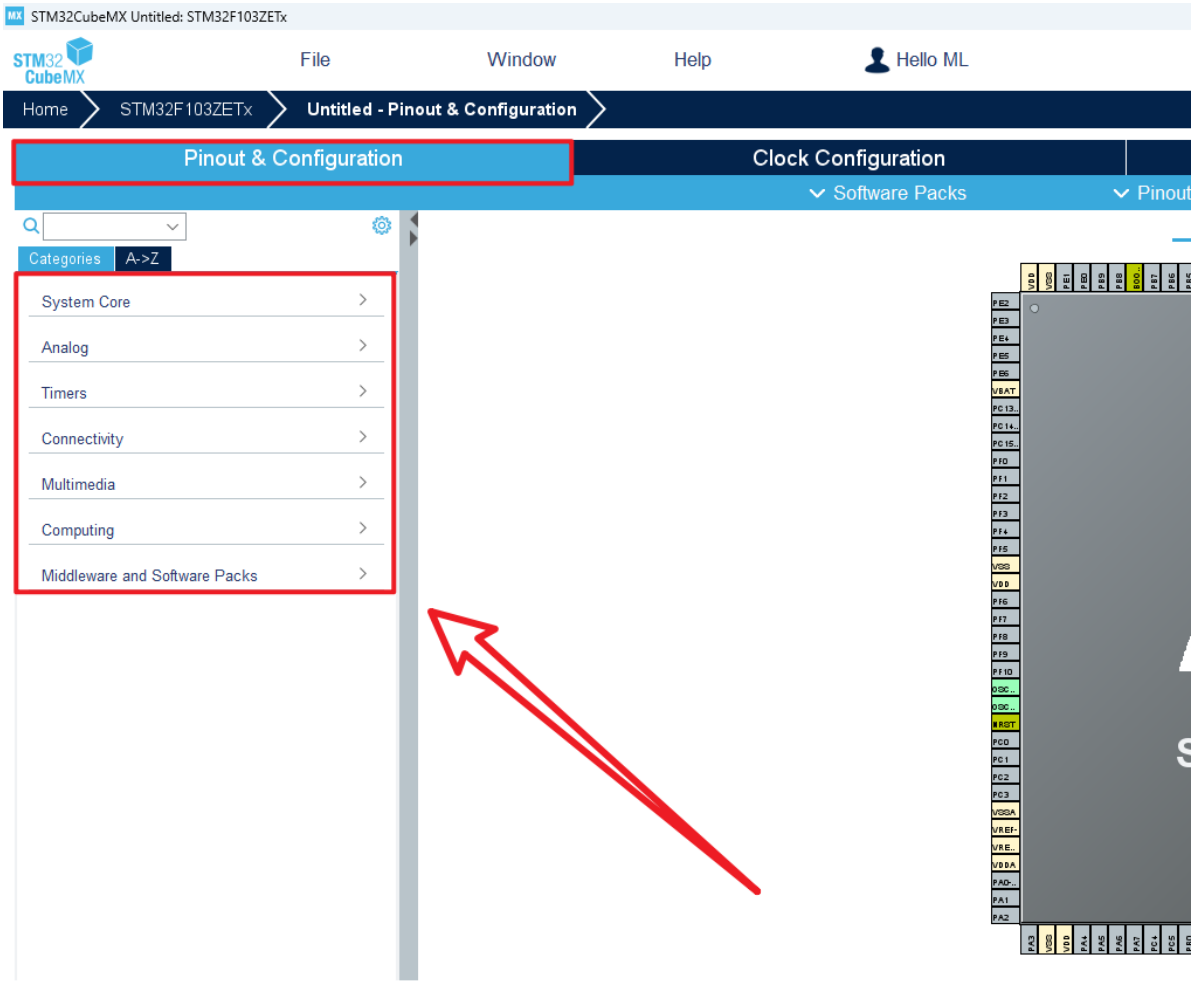


- **Introduction**



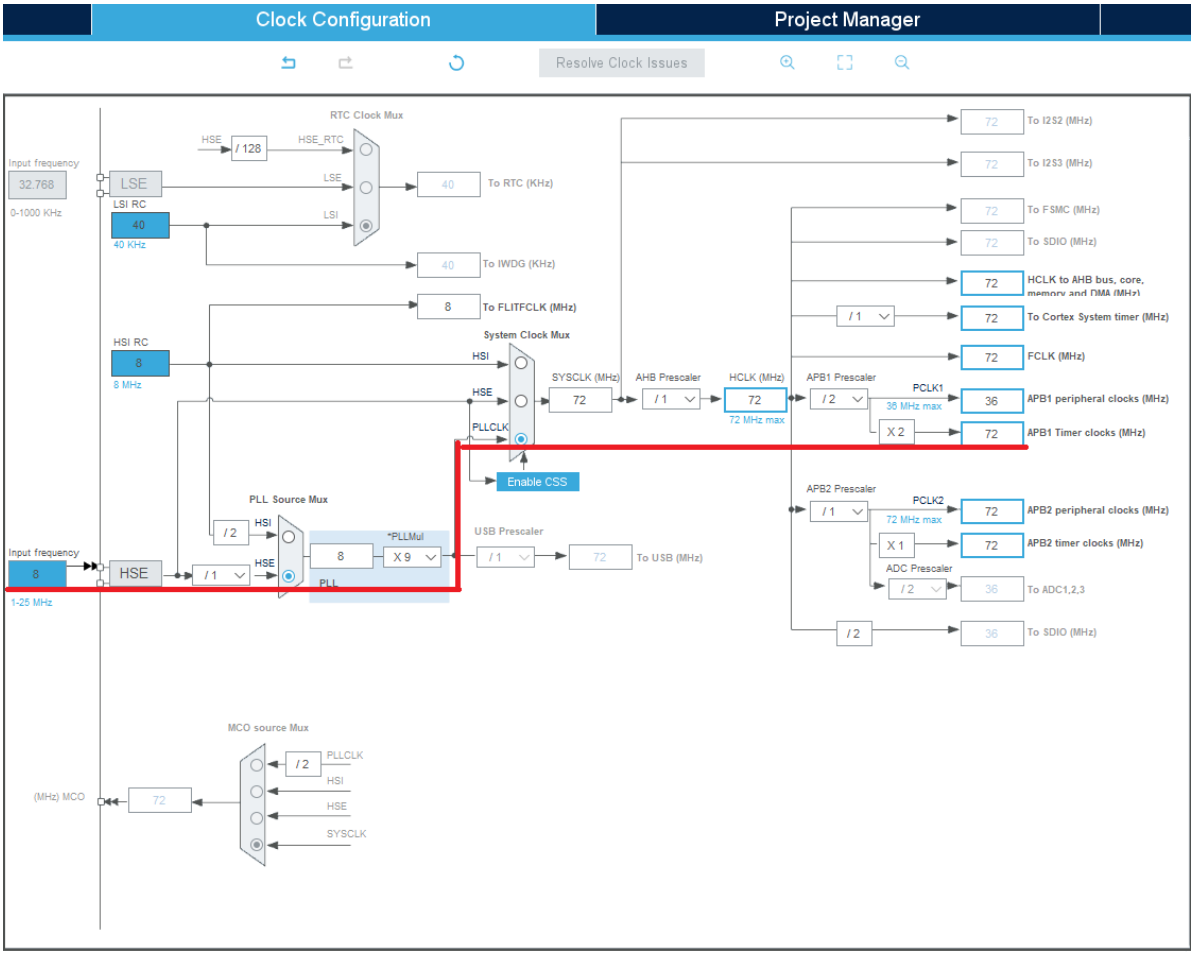

```
Double-click the left mouse button on the specific chip model to enter the
engineering interface
```

4.2、Pin layout and configuration



System Core: Configure DMA (DMA controller), GPIO (General Input and Output), IWDG (Independent watchdog), NVIC (Nested Vector Interrupt controller), RCC (Clock controller), SYS (system debug), WWDG (window watchdog)
Analog: Configure ADC (analog to digital conversion), DAC (digital to analog conversion) peripherals
Timers: Configure RTC(real-time clock) and TIM (timer) peripherals
Connectivity: Configure CAN, I2C, SPI, USART, USB and other connection peripherals
Multimedia: Configure I2S and other audio data transmission peripherals
Computing: Configure the CRC check peripheral
Middleware and Software Packs: Configure middleware such as RTOS

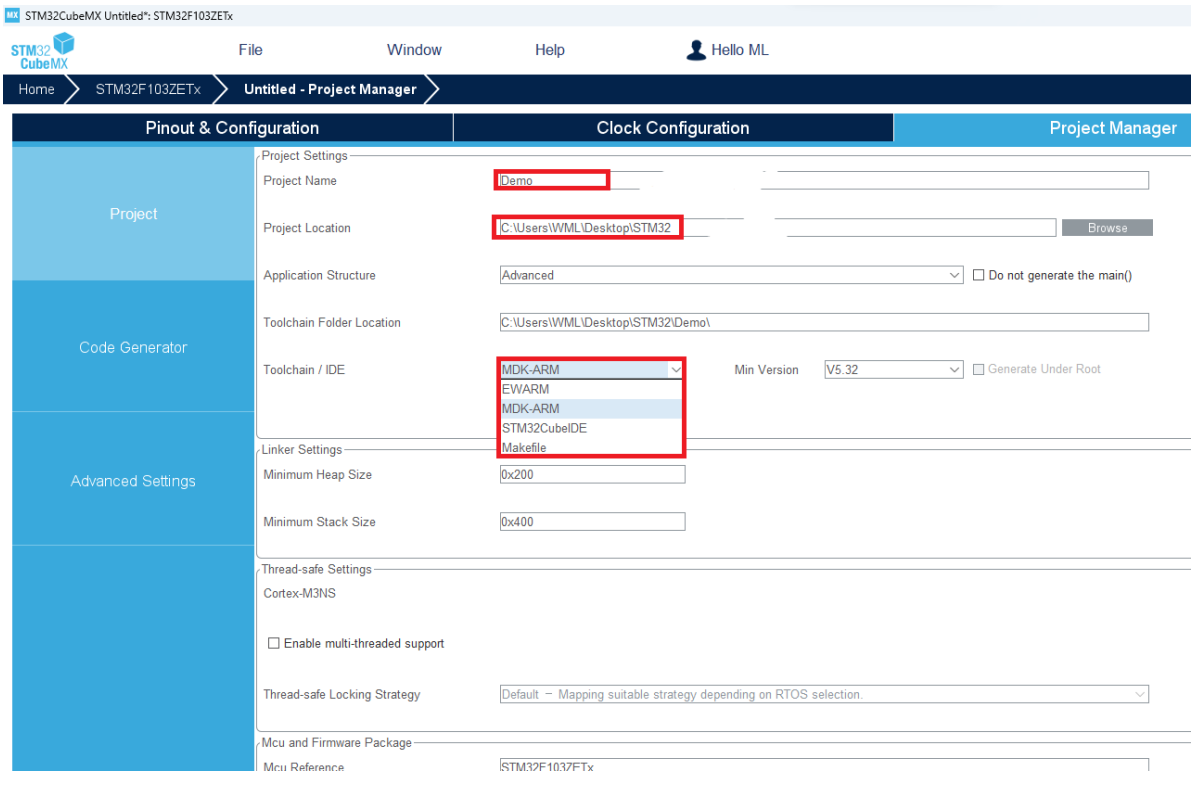
4.3、Clock configuration




```
Refer to the options involved in the red line
```

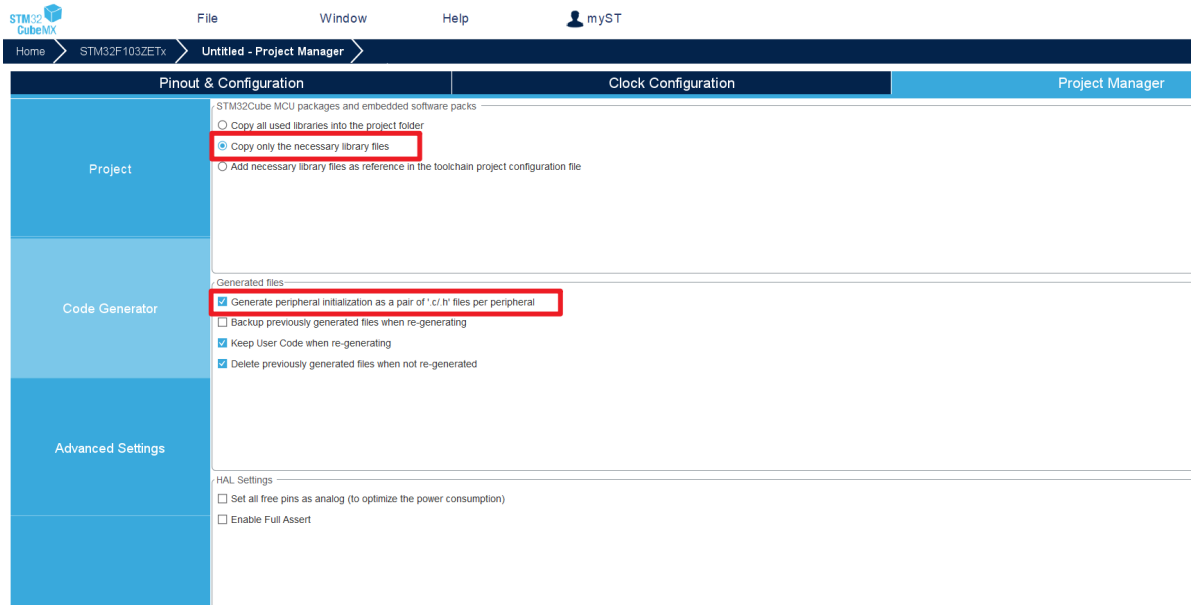
4.4、Project management

- **Project**

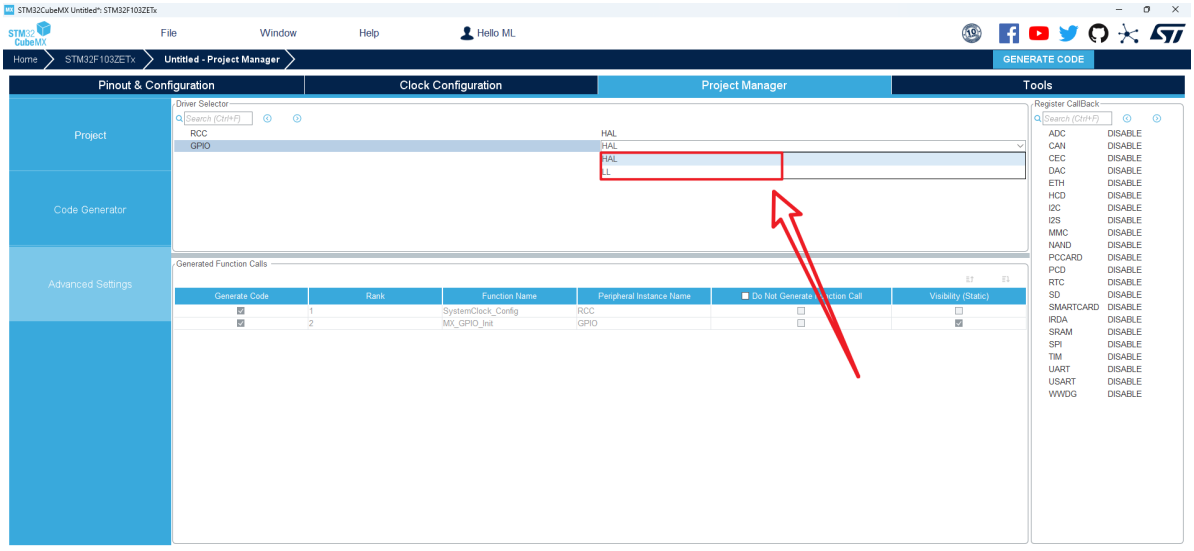


```
STM32CubeMX can generate MDK-ARM, STM32CubeIDE, EWARM and other project files

MDK-ARM project file is generated here
```

- **Code Generator**

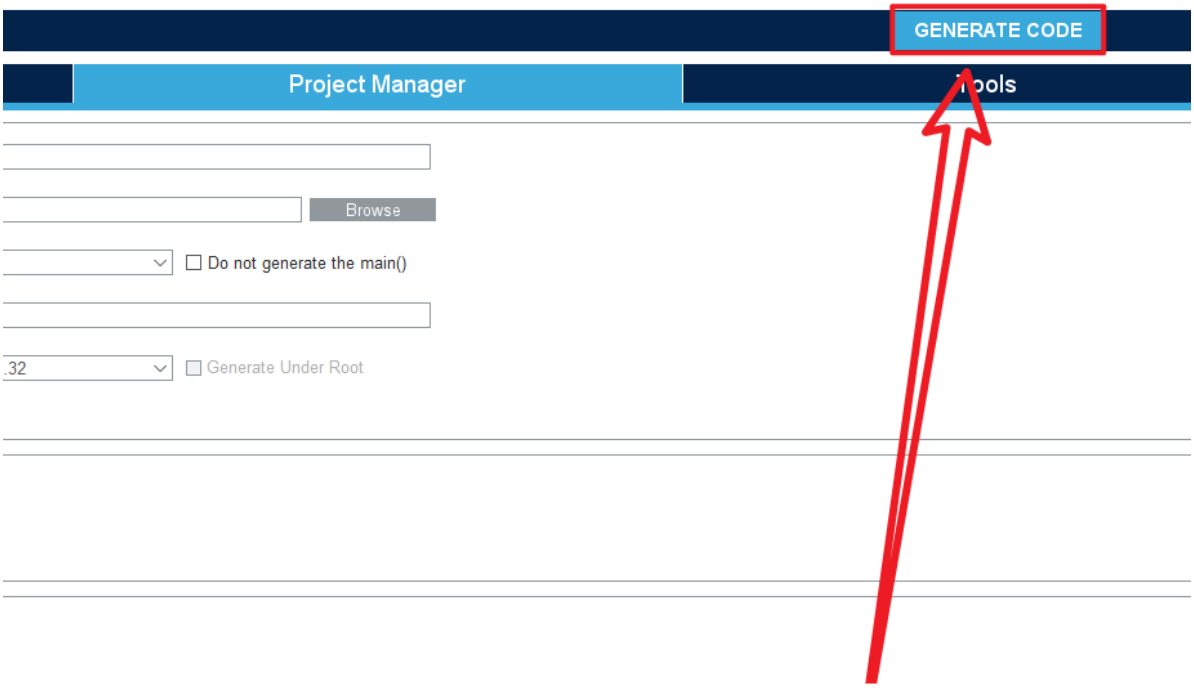


- **Advance Settings**

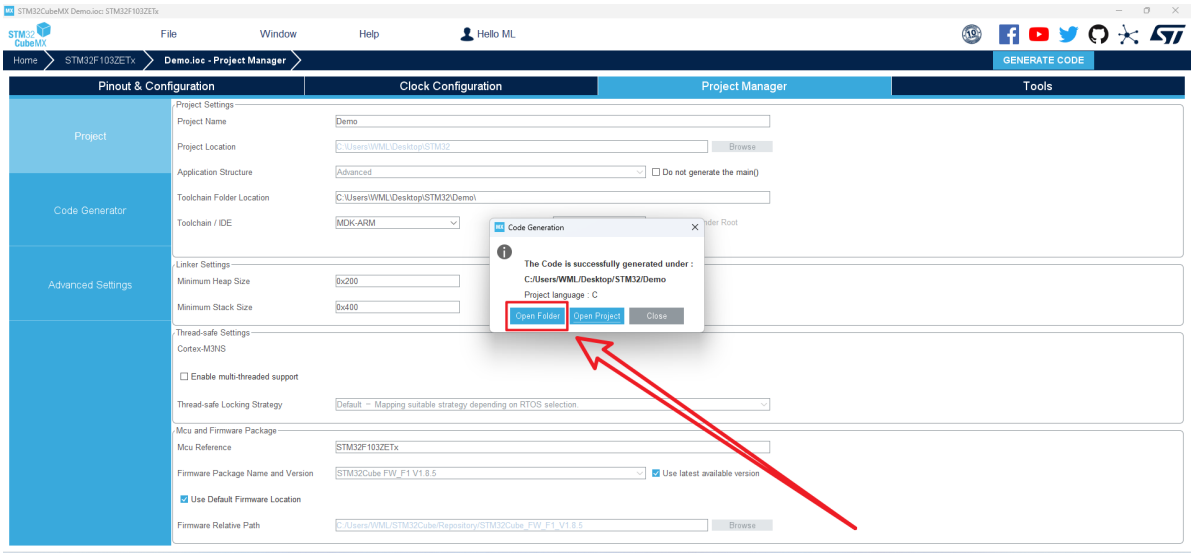



```
Choose the library to use for your initialization code: the HAL library is demonstrated here
```

4.5、Generative engineering



- **Open the project folder**



5、Project folder

5.1、Demo

①：Use the STM32CubeMX software to open the file and reconfigure the project

②：Corresponding MDK-ARM project file

5.2、Writing the code

USER CODE must be somewhere between USER CODE BEGIN and User code END，otherwise the next project file generated with STM32CubeMX will remove code outside that location