STM32WB Workshop - Installation Procedure (v1.0)

Welcome to the STM32WB Workshop!
Please follow all installation steps below before the day of the Workshop.

STM32WB Workshop – Requirements

Important:

You need to have administration rights on your Laptop Computer to be able to install drivers and software and also to do the workshop.

You need to bring an iOS or Android Smartphone/Tablet with Bluetooth 4.0 (BLE) support.
Note: Most modern iOS and Android devices, since 2012, support Bluetooth 4.0 (BLE) or later.

System requirements for Laptop Computer:

Windows® 7 and later or MacBook running Windows using Parallels, VM Fusion

Software requirements for Laptop Computer:

Install Java™ Run Time Environment for 1.8.0 or later. If Java™ is not installed on your computer or if you have an old version, STM32CubeMX and STM32CubeProgrammer installer will open the Java™ download web page and stop.

Minimum Recommended Hardware Requirements for Laptop Computer:

- Type A USB port
- 2+ GHz processor
- 4 GB of system memory (RAM)
- 10 GB of available disk space

Note: For machines with USB Type C, please bring a Type A to Type C adapter.

STM32WB Workshop - Installation Procedure – Introduction:

In the following installation procedure, you are going to install the following Software/Tools/Libraries that are needed for the Workshop:

- STM32CubeMX: version 5.1.0 minimum required, if you have a previous version you will need to install a new version as explained in this installation procedure.
- STM32CubeWB: version 1.0.0 minimum required, if you have a previous version you will need to install a new one as explained in this installation procedure.
- STM32CubeProgrammer: version 2.0.0 minimum required, if you have a previous version you will need to install a new version as explained in this installation procedure.
- STM32CubeMonitorRF: version 2.3.0 minimum required, if you have a previous version you will need to install a new version as explained in this installation procedure.
- IAR Embedded Workbench for ARM: version 8.32.3 minimum required, if you have a previous version you will need to install a new version as explained in this installation procedure.
- Tera Term: In one of the labs we use a Terminal application to display output, any Terminal Software can be used; however, Tera Term is recommended.
- ST BLE Sensor App: In one of the labs we will use the ST BLE Sensor Smartphone/Tablet app.
- LightBlue Explorer App: In one of the labs we will use the LightBlue Explorer Smartphone/Tablet app from Punch Through Design.

Note: Some of the versions of the software and libraries on our website might have newer version than the version seen in the document, please use the latest version from the links provided in the installation procedure below.

The entire installation procedure can take several hours (downloading and installing).

STM32WB Workshop - Installation Procedure

For the Workshop installation please follow the steps below:

Summary

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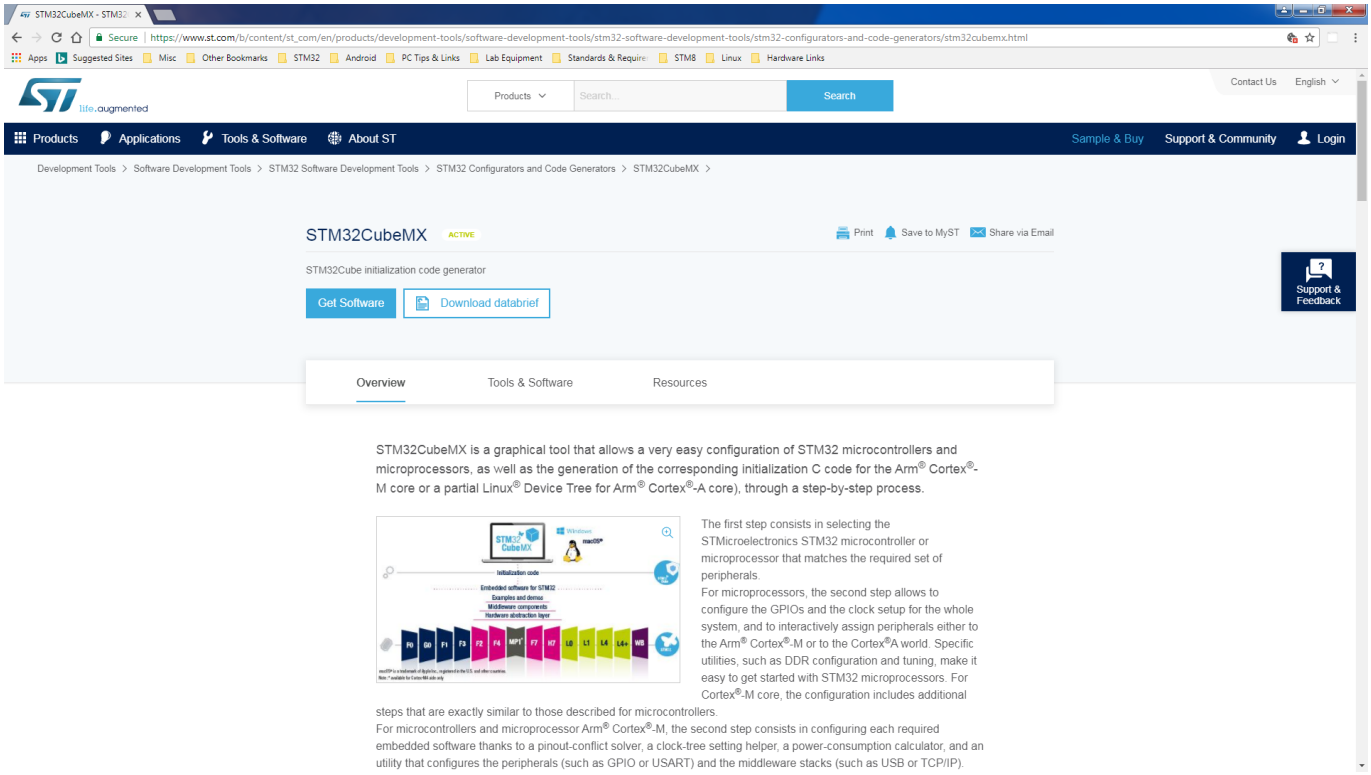
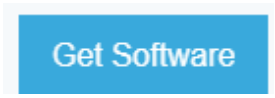
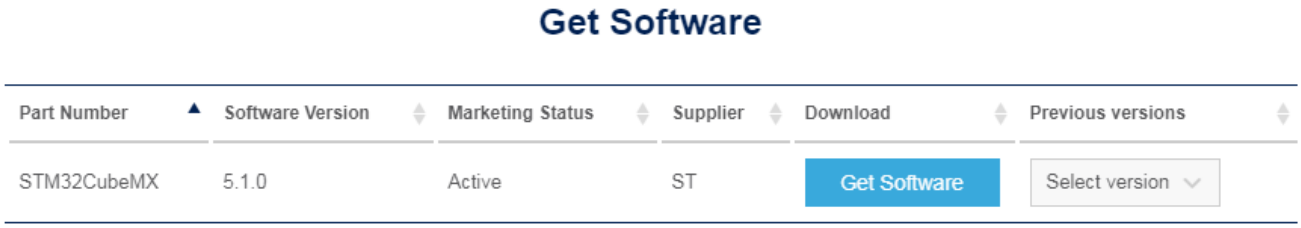
1- STM32CubeMX: STM32Cube initialization code generator

Click Link: STM32CubeMX
Minimum version to be installed: 5.1.0
Or use Direct Install Link:
https://www.st.com/en/development-tools/stm32cubemx.html

In the web browser, the following page will come up:

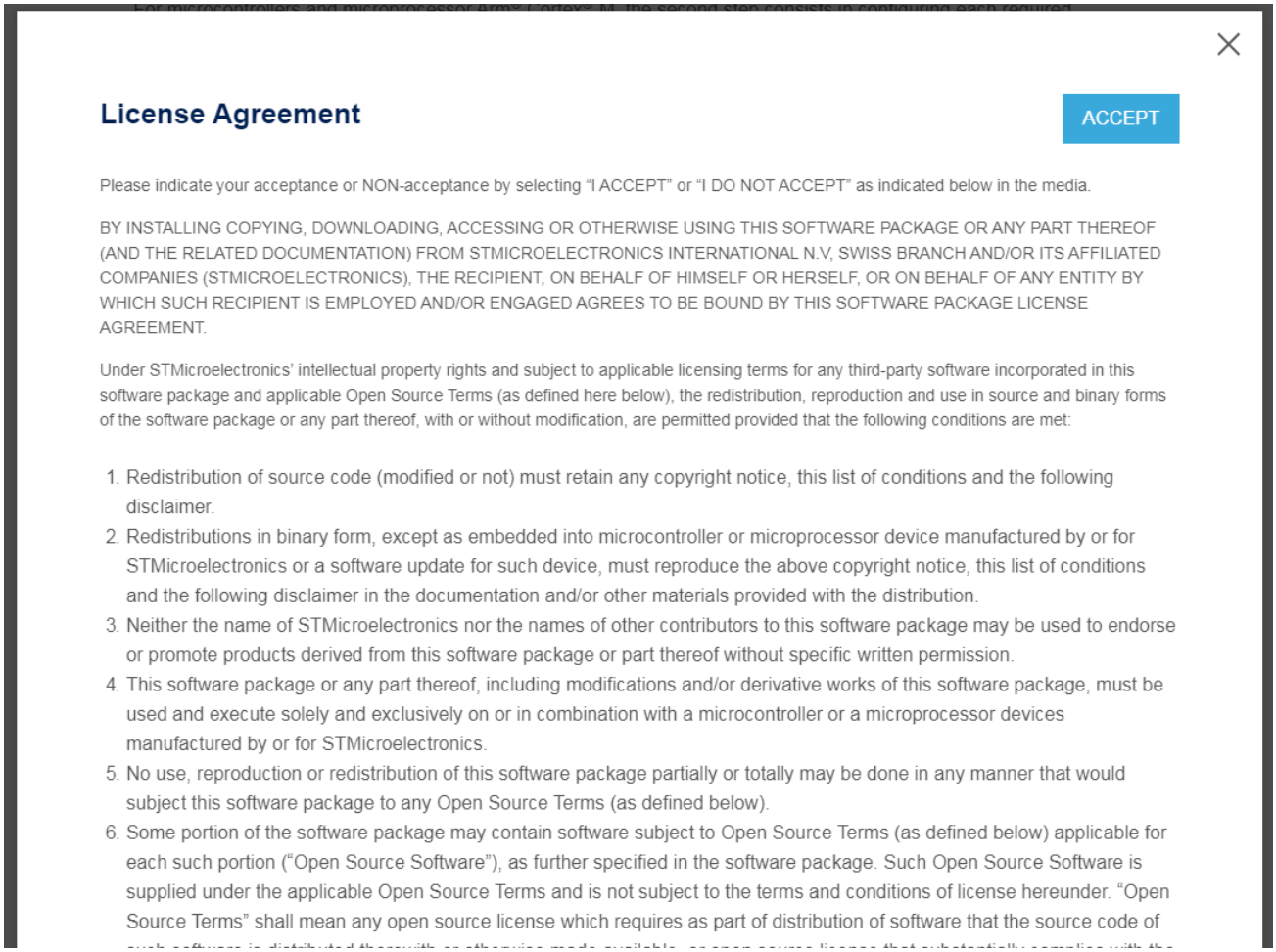


Click on: 

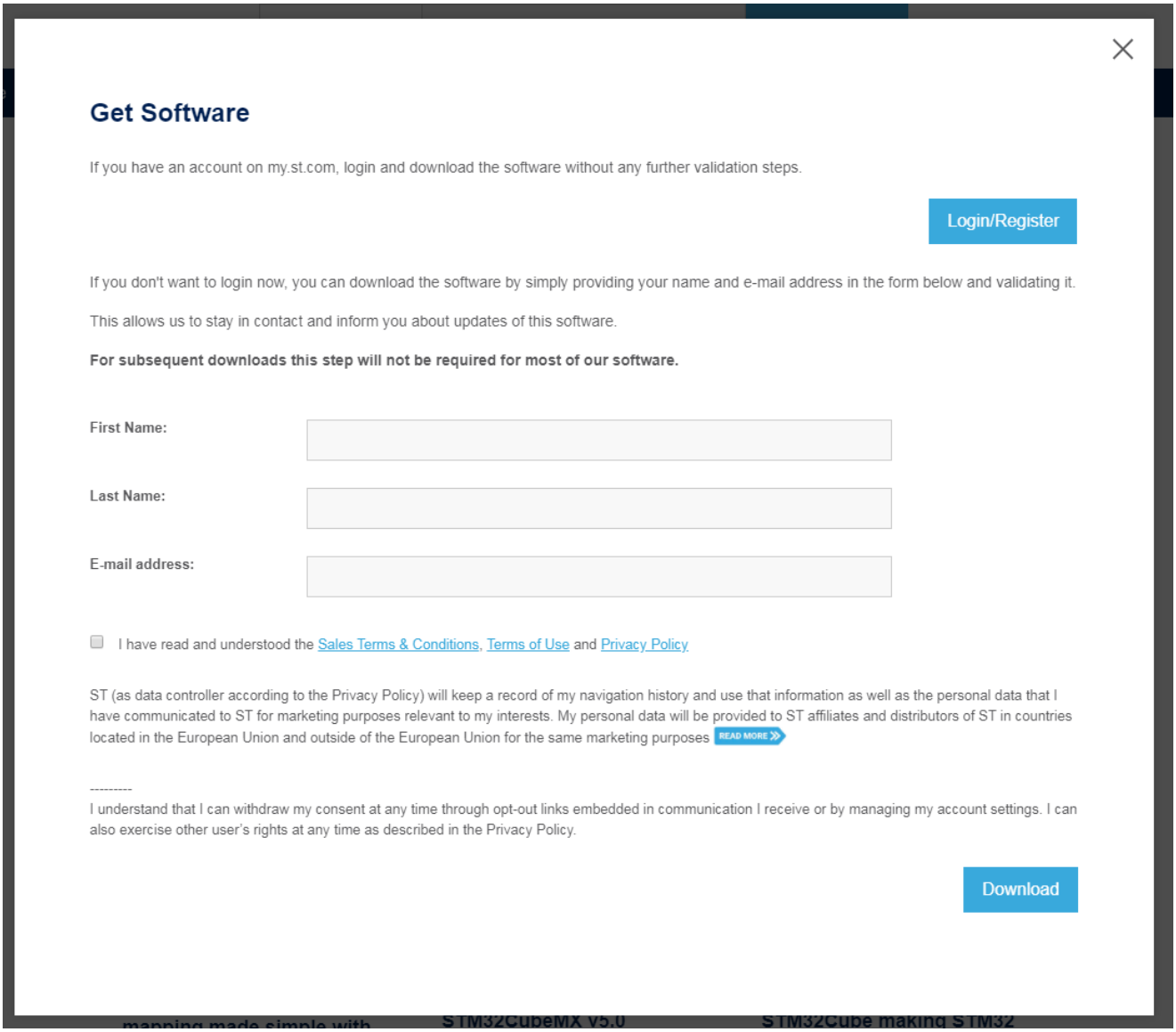


Click on:

When the following page appears:



Click on: ACCEPT

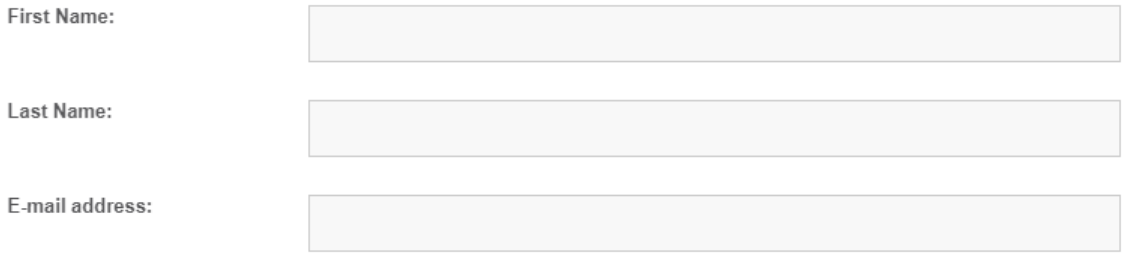


There are 3 ways of getting the software:

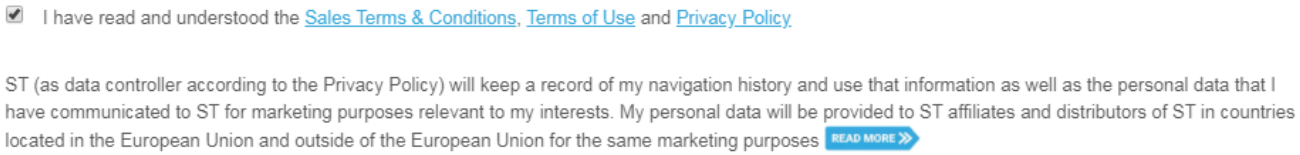
1. If you have an ST account click on:

2. If you don't have one, create one by clicking on:

3. If you don't have an account and don't want to create one, fill in the information below:



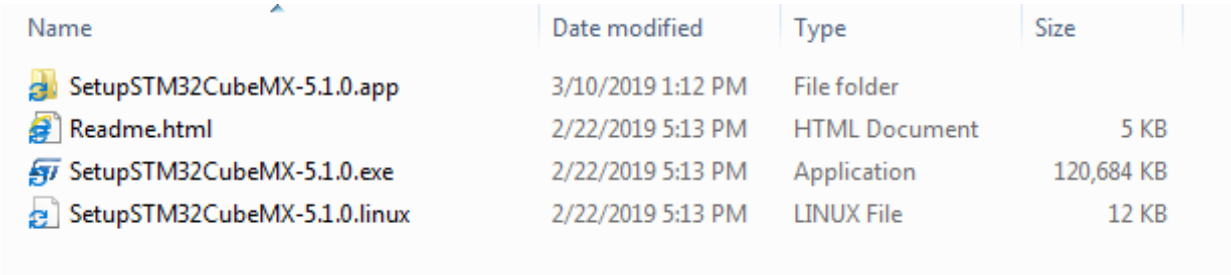
Click on the check box:



Then click:

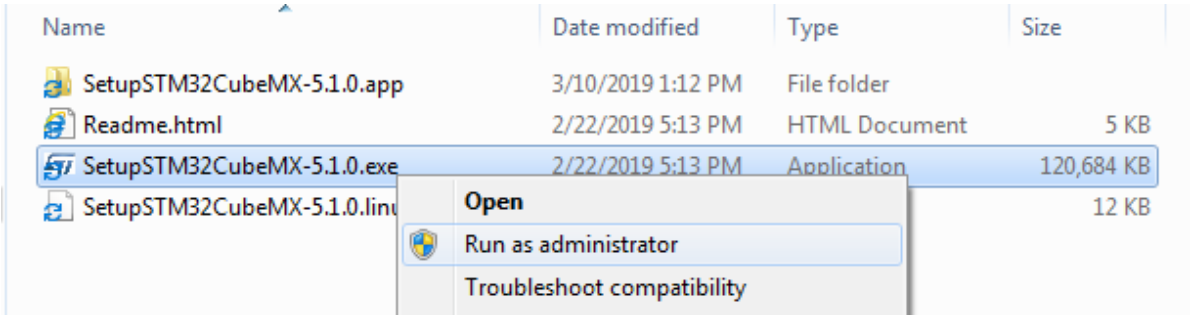
Save the file ‘en.stm32cubemx.zip’ at a location of your choice:

Unzip the file (en.SetupSTM32CubeMX-x.x.x.zip) and you will see this:

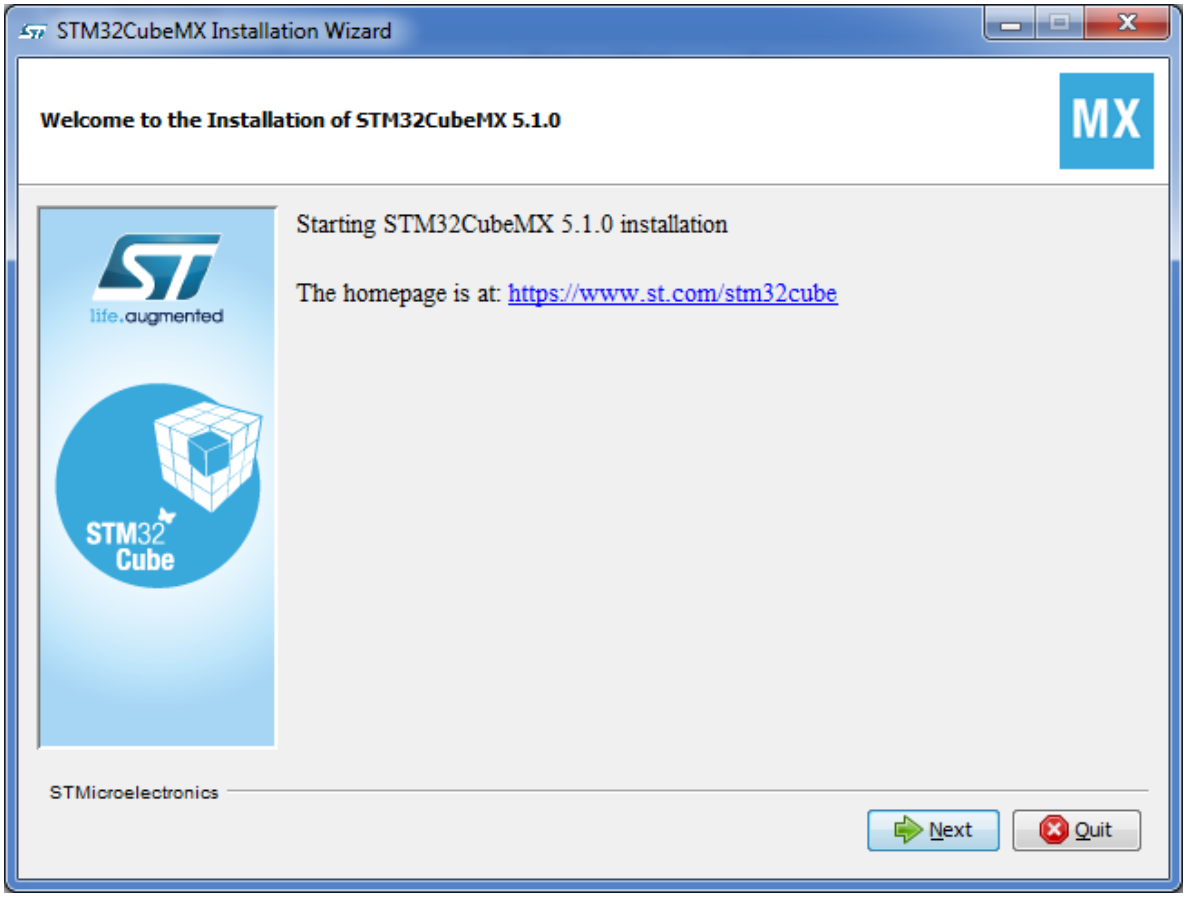


Name	Date modified	Type	Size
SetupSTM32CubeMX-5.1.0.app	3/10/2019 1:12 PM	File folder	
Readme.html	2/22/2019 5:13 PM	HTML Document	5 KB
SetupSTM32CubeMX-5.1.0.exe	2/22/2019 5:13 PM	Application	120,684 KB
SetupSTM32CubeMX-5.1.0.linux	2/22/2019 5:13 PM	LINUX File	12 KB

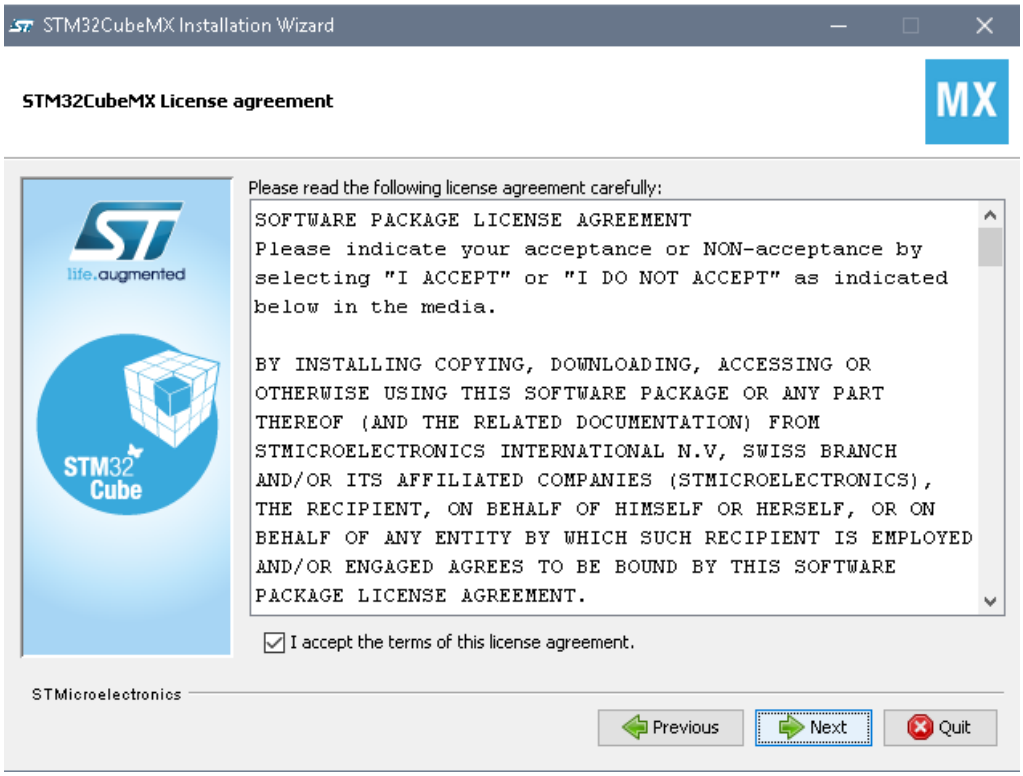
Right Click on ‘SetupSTM32CubeMX-x.x.x.exe’ (x.x.x is the version number) and Run as administrator:



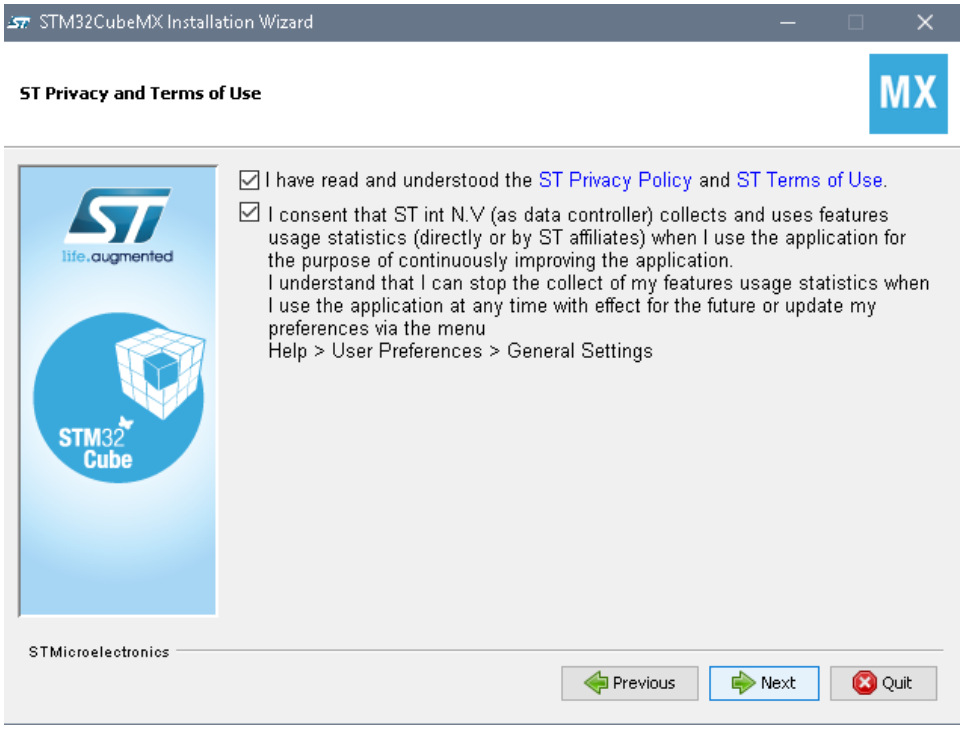
Click Next:



Click Next:



Check the 2 boxes and then Click Next:



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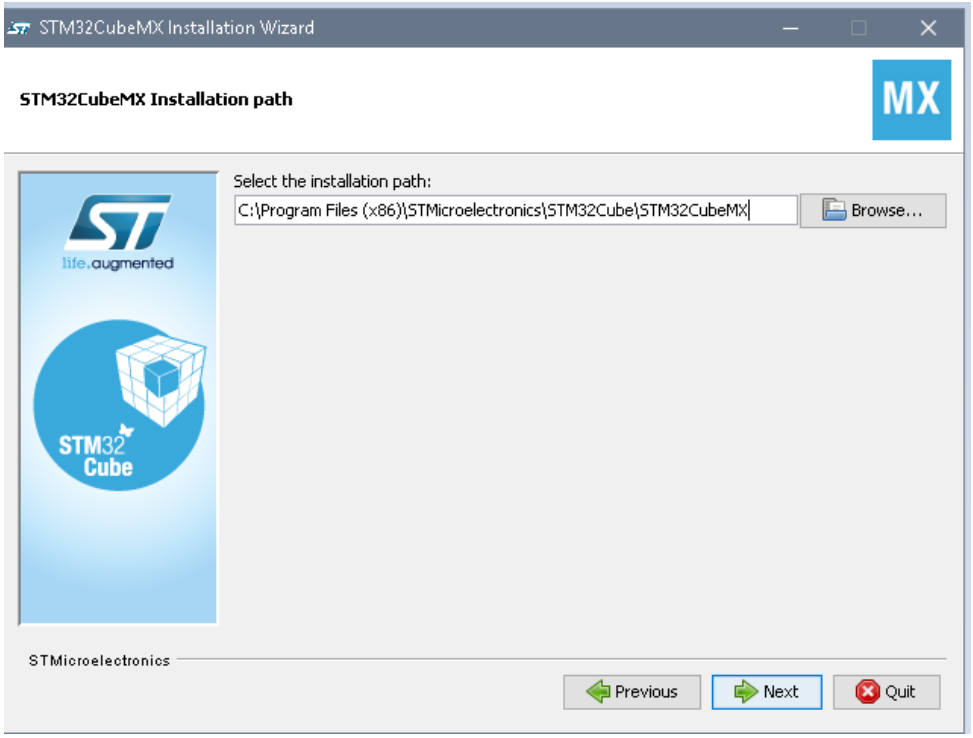
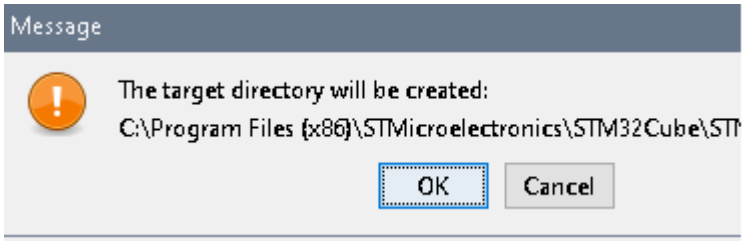
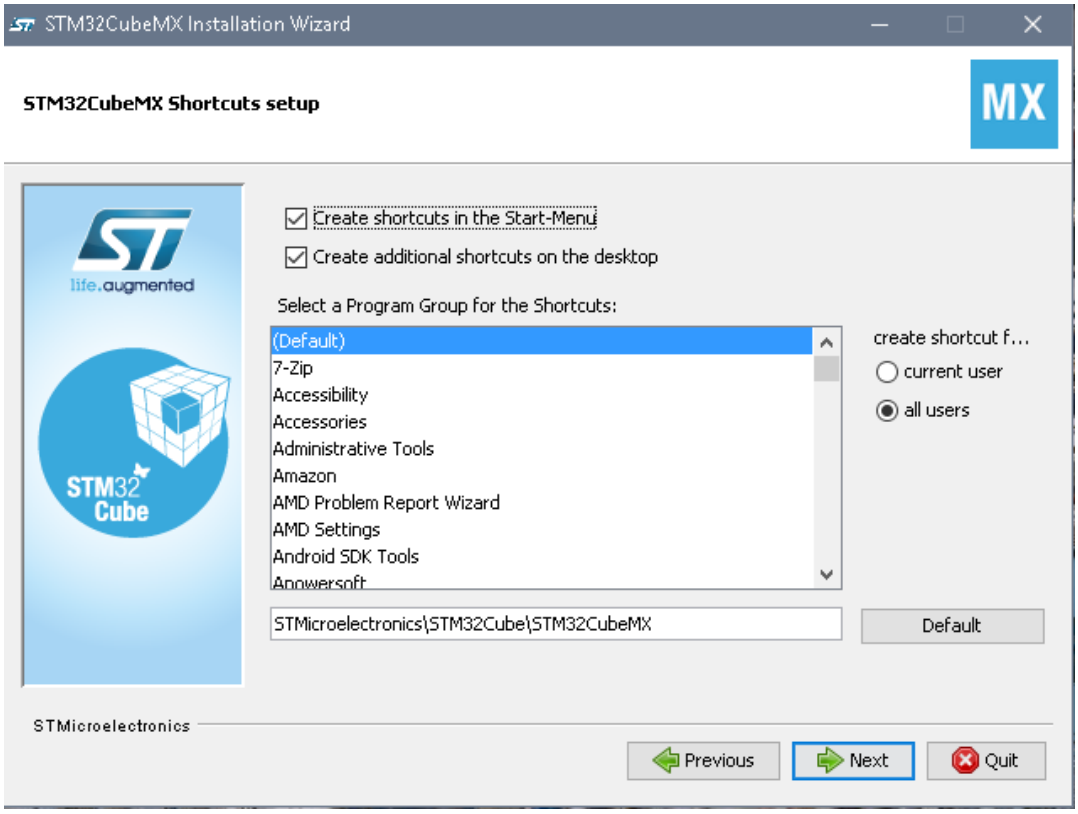
Once you have decided on the path then Click Next:



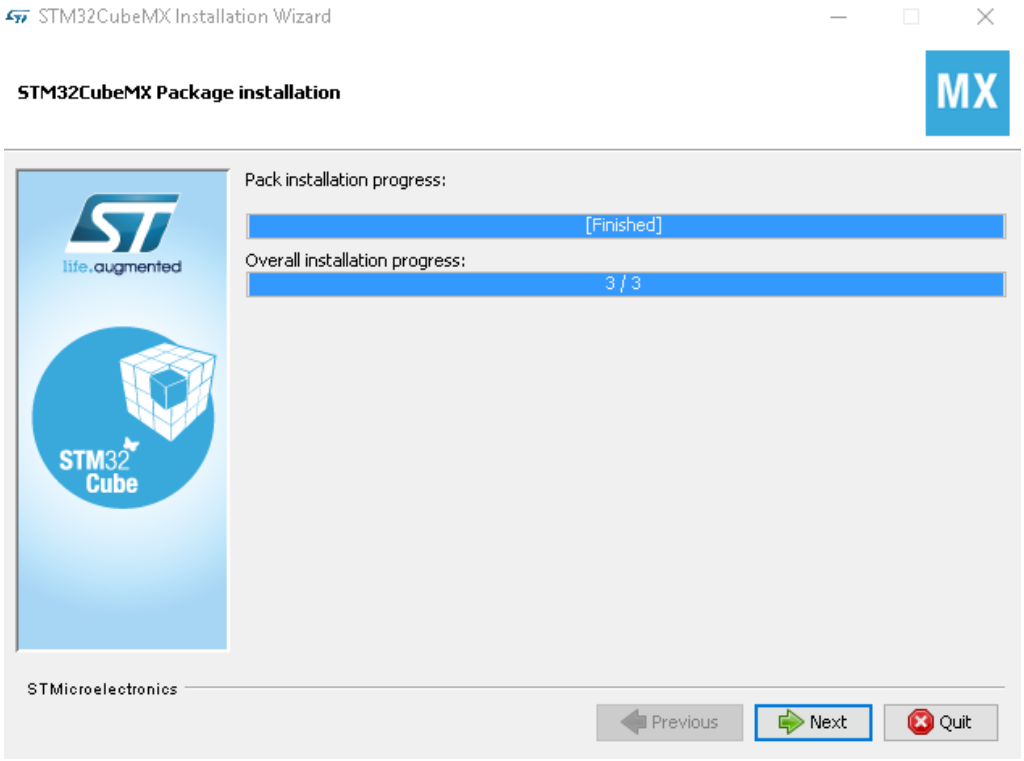
Click OK to Create the directory if it does not already exist:



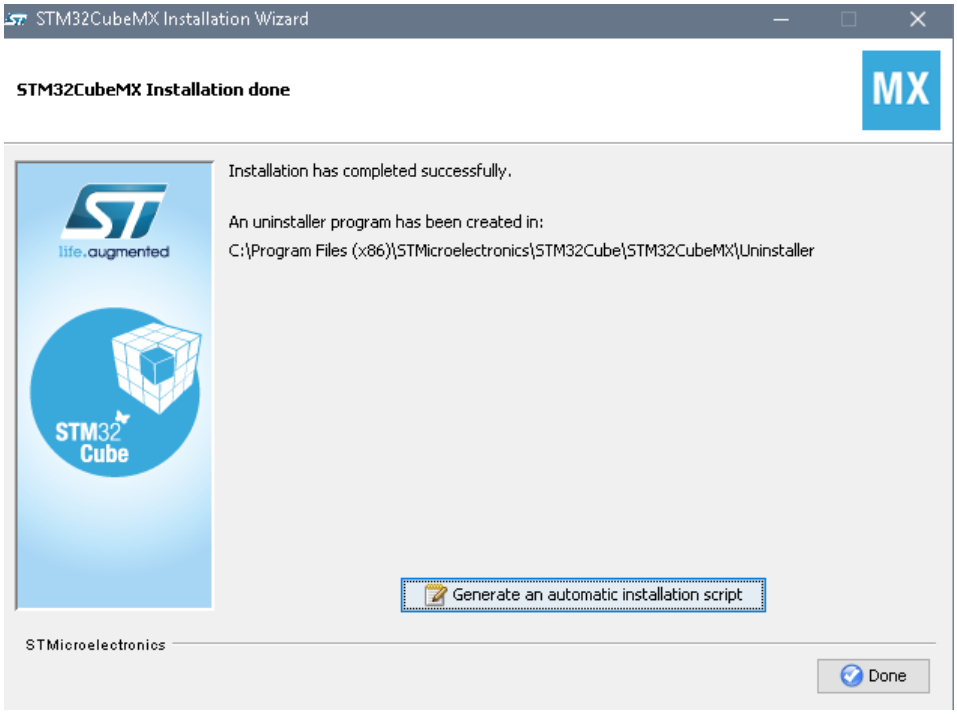
Click Next:


STM32CubeMX Installation Wizard
STM32CubeMX Shortcuts setup
MX
life.augmented
STM32 Cube
Create shortcuts in the Start-Menu
Create additional shortcuts on the desktop
Select a Program Group for the Shortcuts:
(Default)
7-Zip
Accessibility
Accessories
Administrative Tools
Amazon
AMD Problem Report Wizard
AMD Settings
Android SDK Tools
Anowersoft
create shortcut f...
current user
all users
STMicroelectronics\STM32Cube\STM32CubeMX
Default
STMicroelectronics
Previous
Next
Quit

Wait for the Install to complete and then Click Next

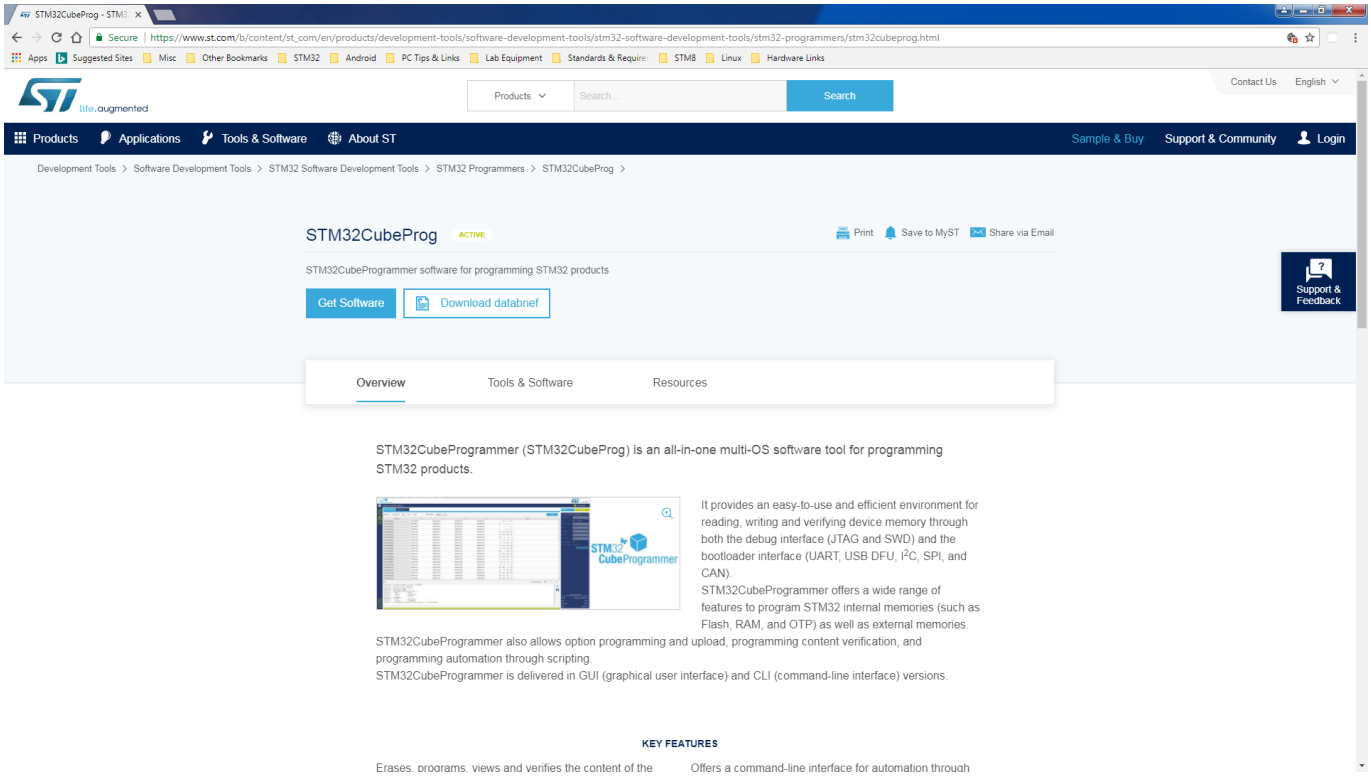


Click Done:

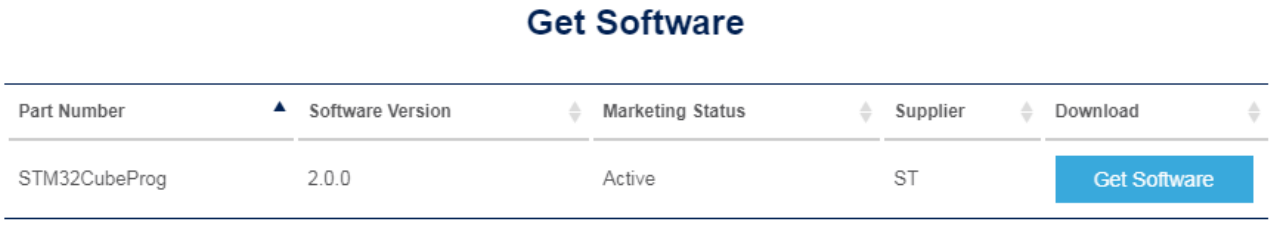


2- **STM32CubeProg**: STM32CubeProgrammer software for programming STM32 products

Click Link: STM32CubeProg
Minimum version required: 2.0.0
Direct Install Link:
https://www.st.com/en/development-tools/stm32cubeprog.html

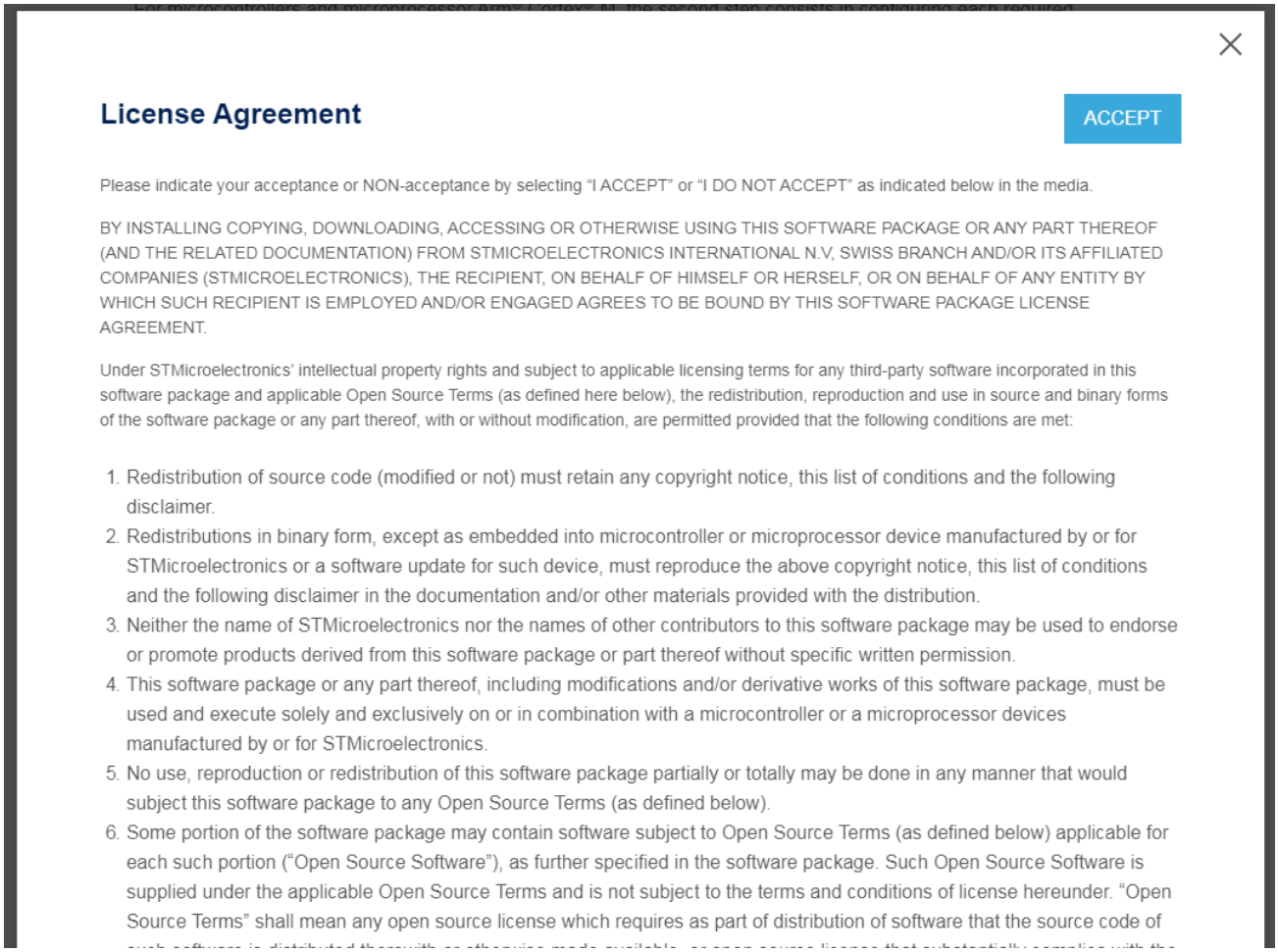


Click on:

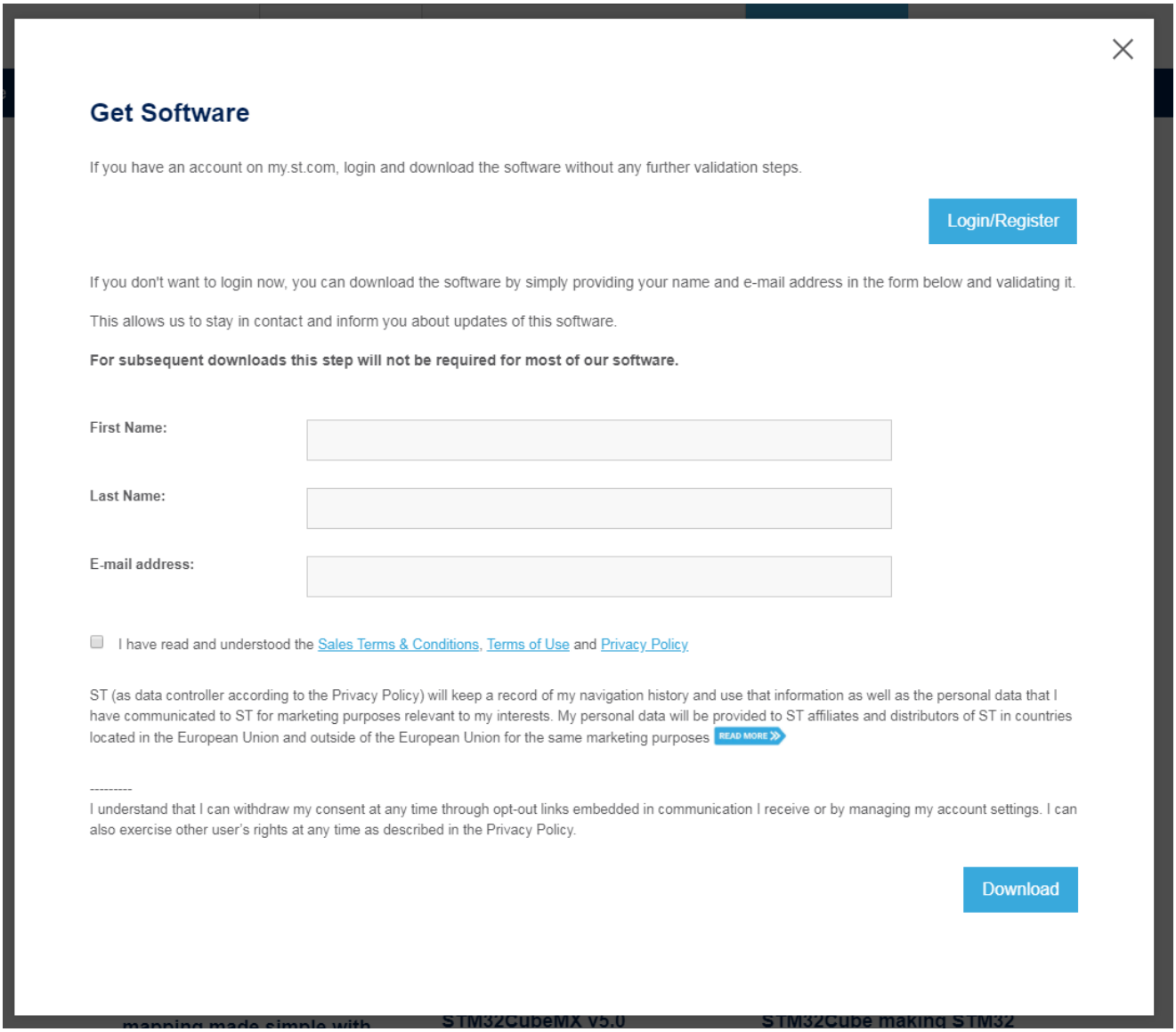


Click on: Get Software

When the following page appears:



Click on: ACCEPT



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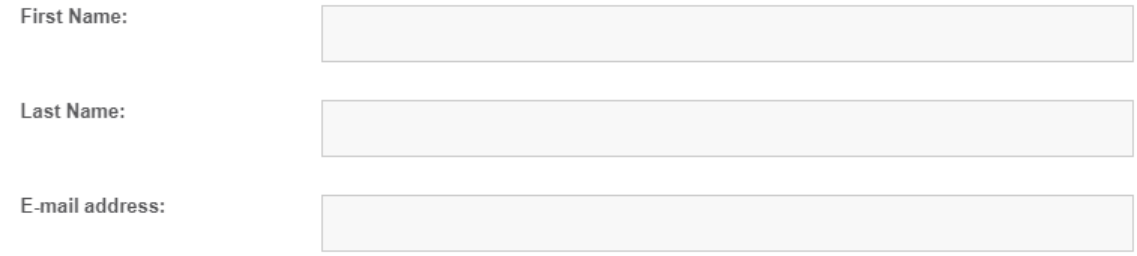
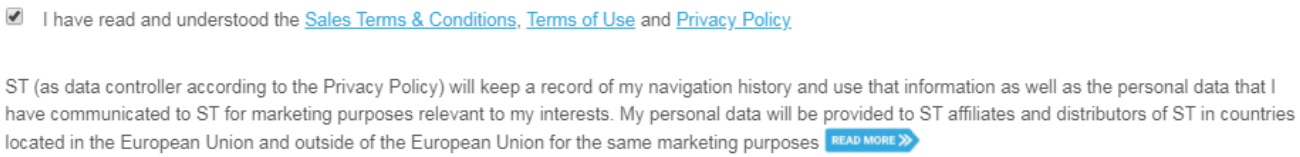
3. If you don't have an account and don't want to create one, fill in the information below:



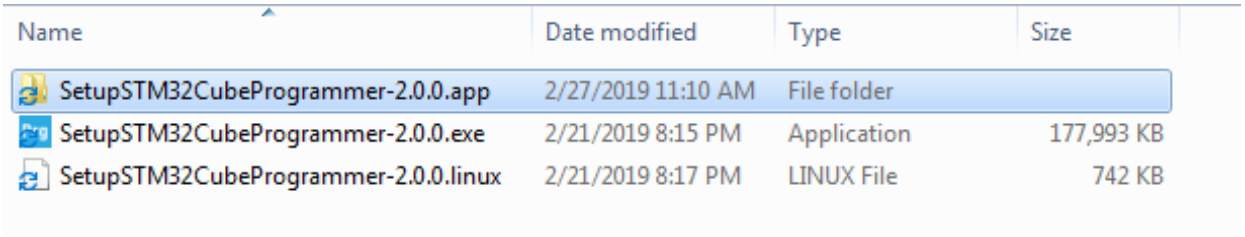
Click on the check box:



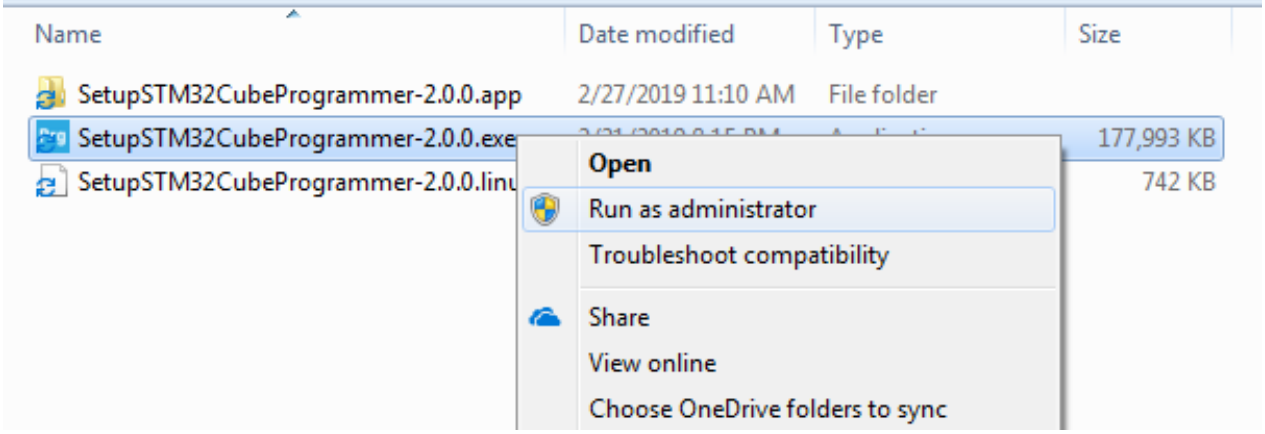
Then click:

Save the file at a location of your choice:

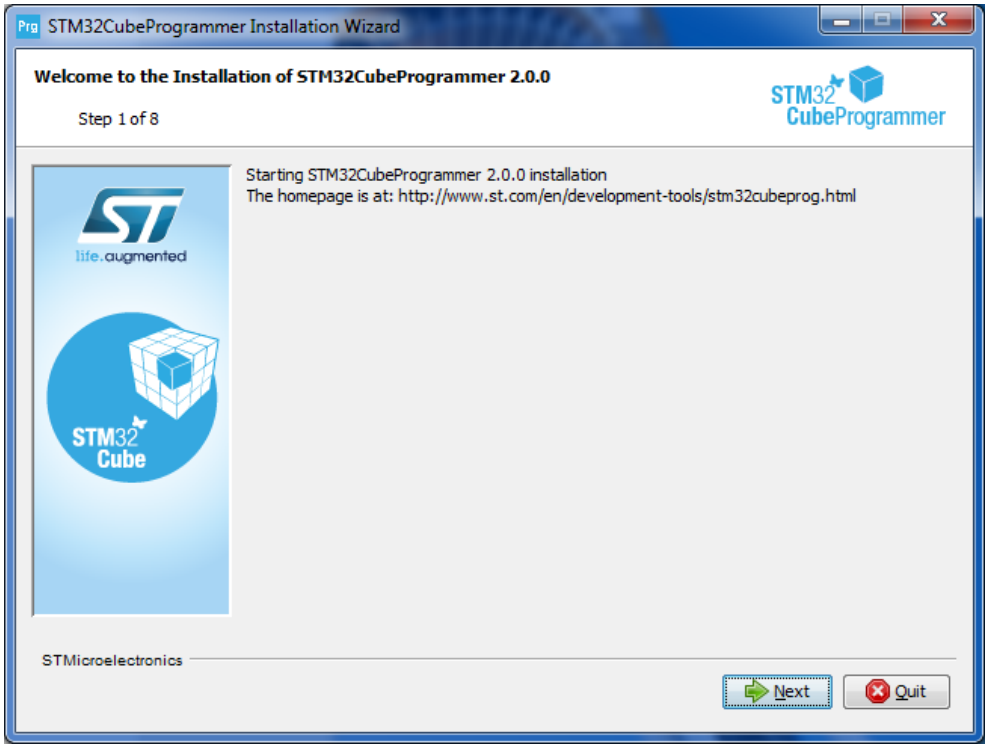
Unzip the file (en.stm32cubeprog.zip)



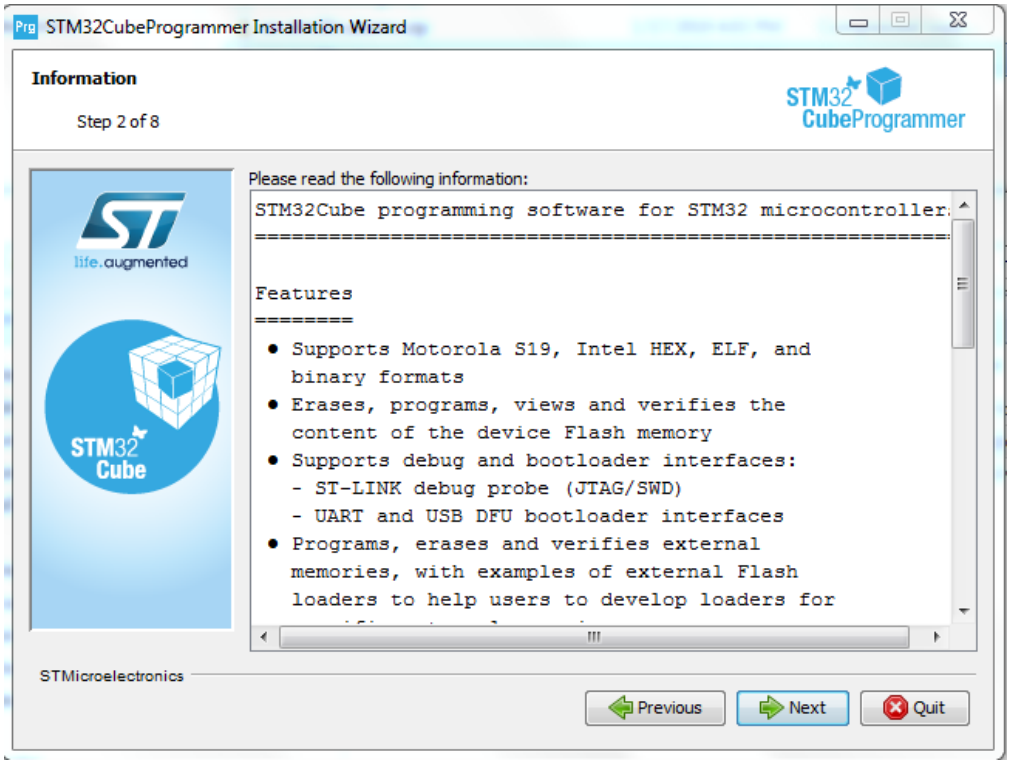
Right Click on SetupSTM32CubeProgrammer-x.x.x.exe and Run as administrator



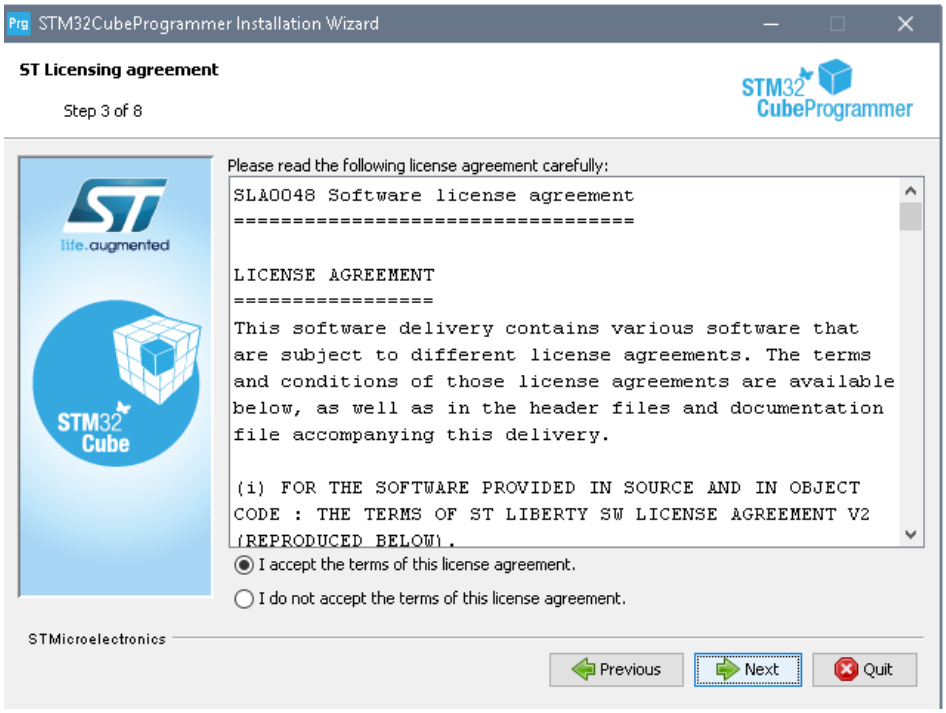
Click Next:


STM32CubeProgrammer Installation Wizard
Welcome to the Installation of STM32CubeProgrammer 2.0.0
Step 1 of 8
STM32 CubeProgrammer
life.augmented
STM32 Cube
Starting STM32CubeProgrammer 2.0.0 installation
The homepage is at: http://www.st.com/en/development-tools/stm32cubeprog.html
STMicroelectronics
Next
Quit

Click Next:



Accept the Terms and then click Next:



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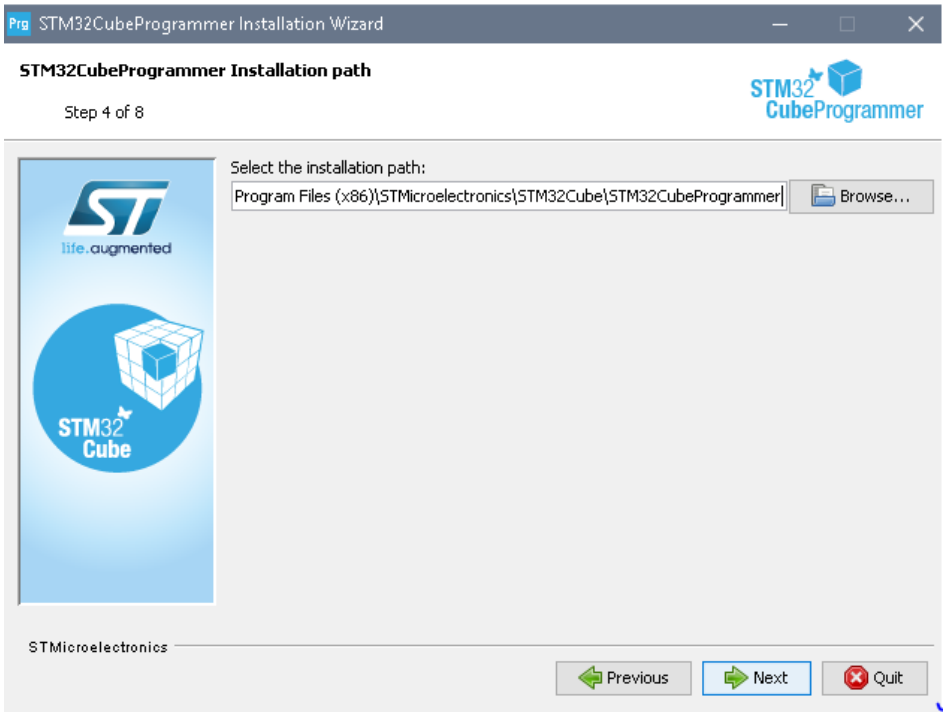
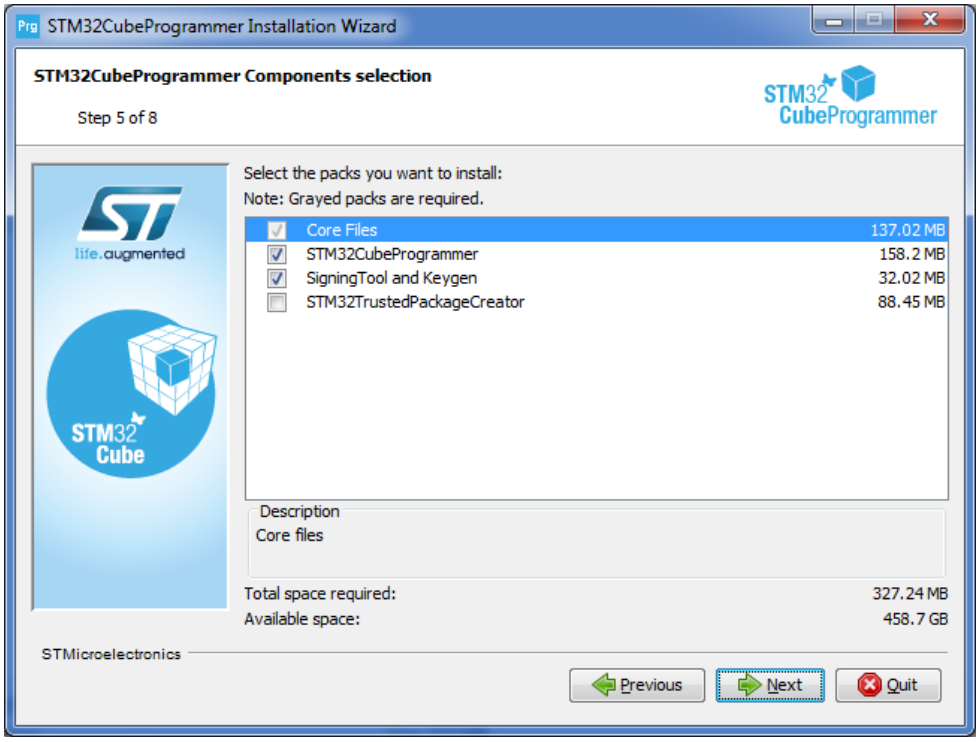
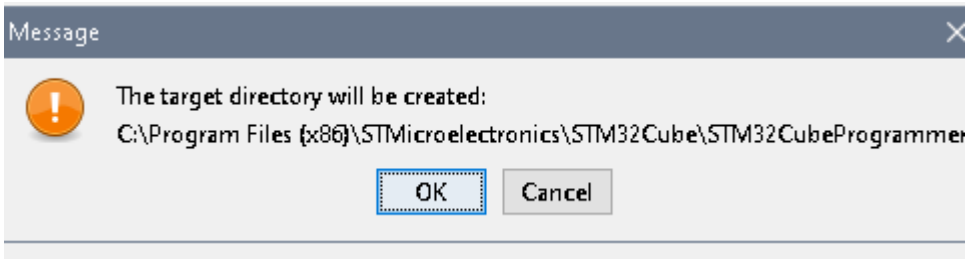
Once you have decided on the path then Click Next:



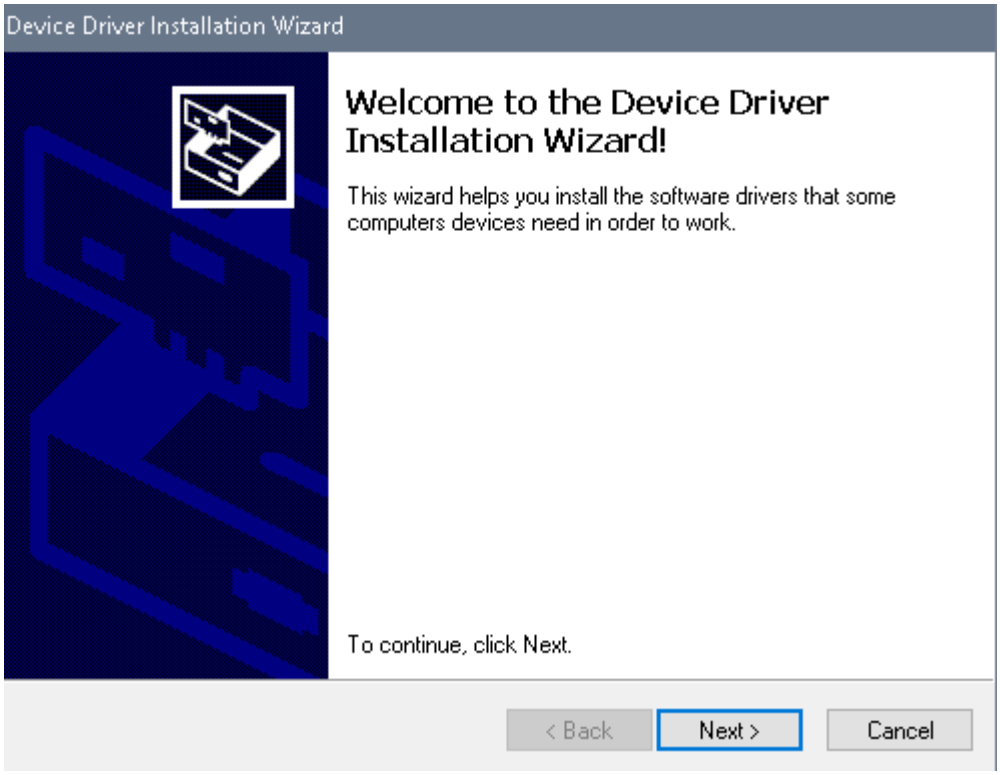
Select the packs you want to install as below.



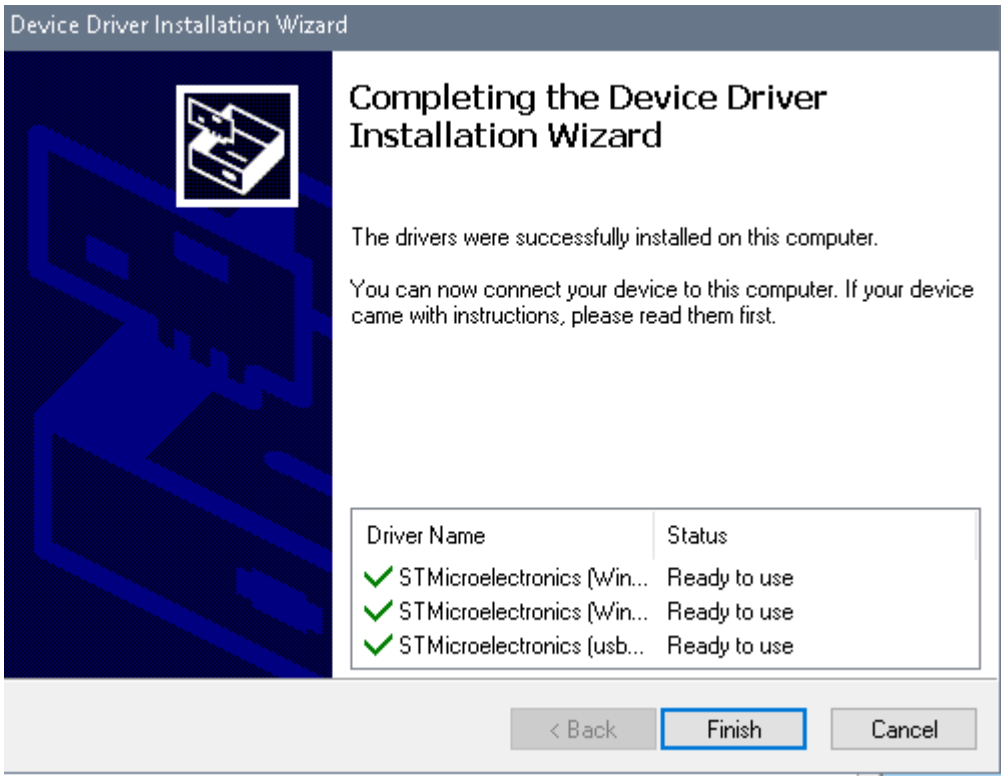
Click OK to create the Directory if the directory does not exist:



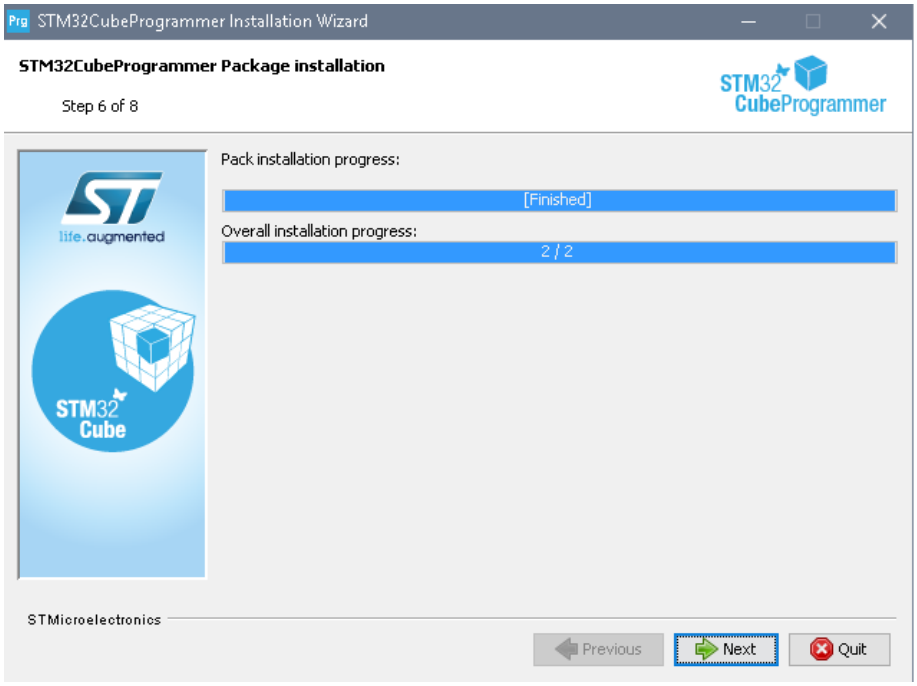
Follow the following steps are to install the ST-LINK, Virtual COM Port, and DFU Drivers:
Click Next:



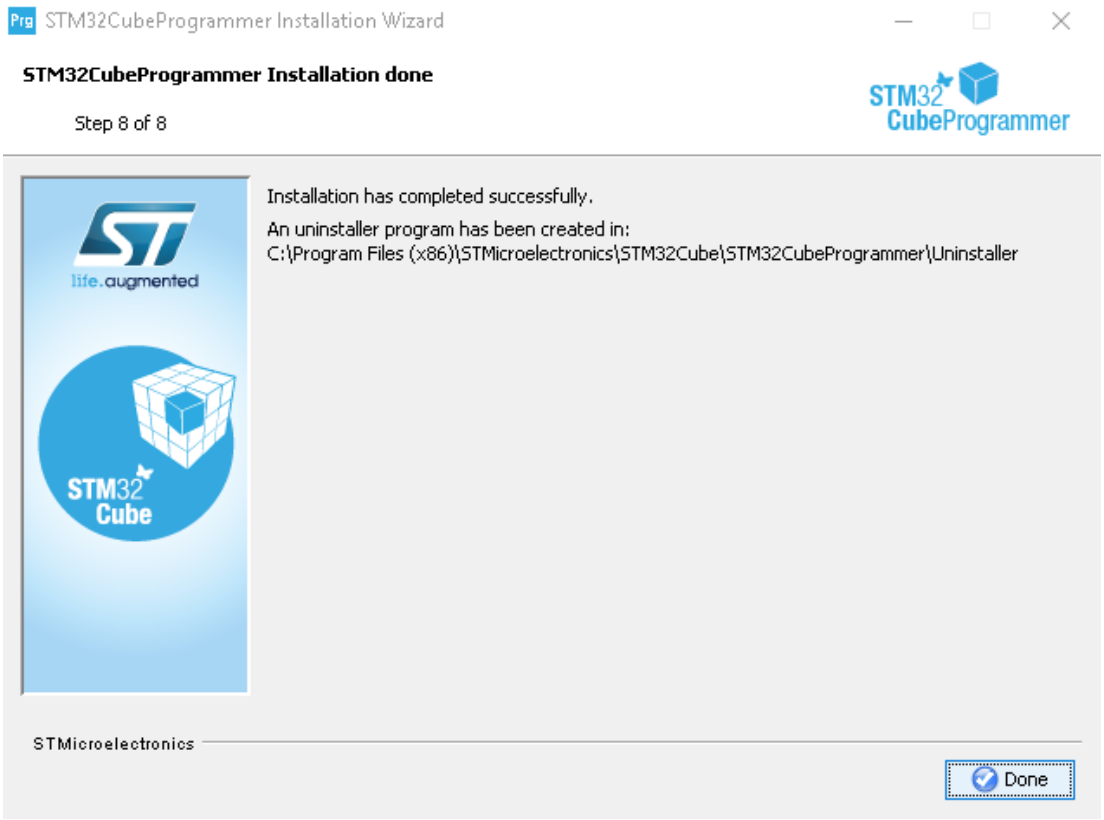
Click Finish:



Wait for the install to complete and then Click Next:



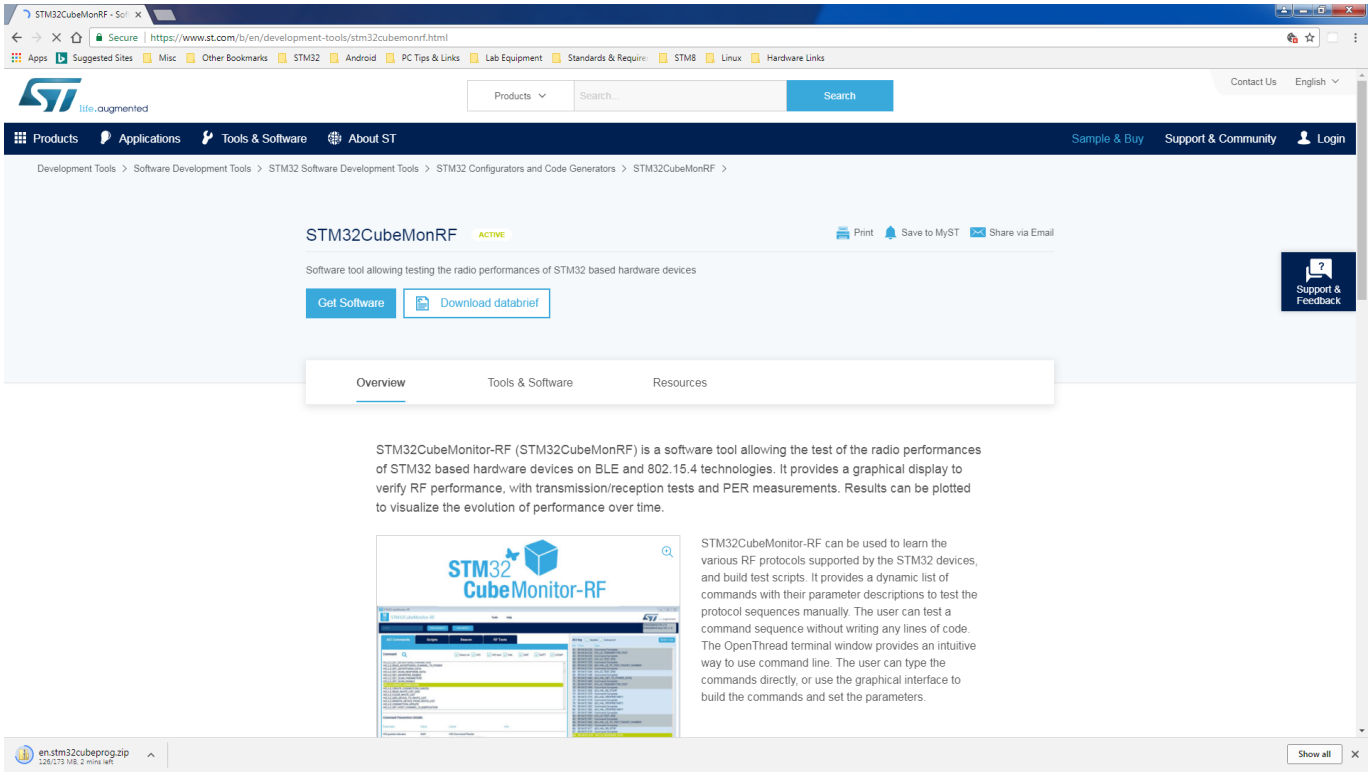
Click Done:



Now try to open STM32CubeProgrammer to make sure it was installed properly.

3- STM32CubeMonRF: STM32CubeMonitor-RF software for testing the radio performances of BLE and 802.15.4 in the STM32WB.

Click Link: STM32CubeMonRF
Minimum version required: 2.3.0
Direct Install Link:
https://www.st.com/en/development-tools/stm32cubemonrf.html

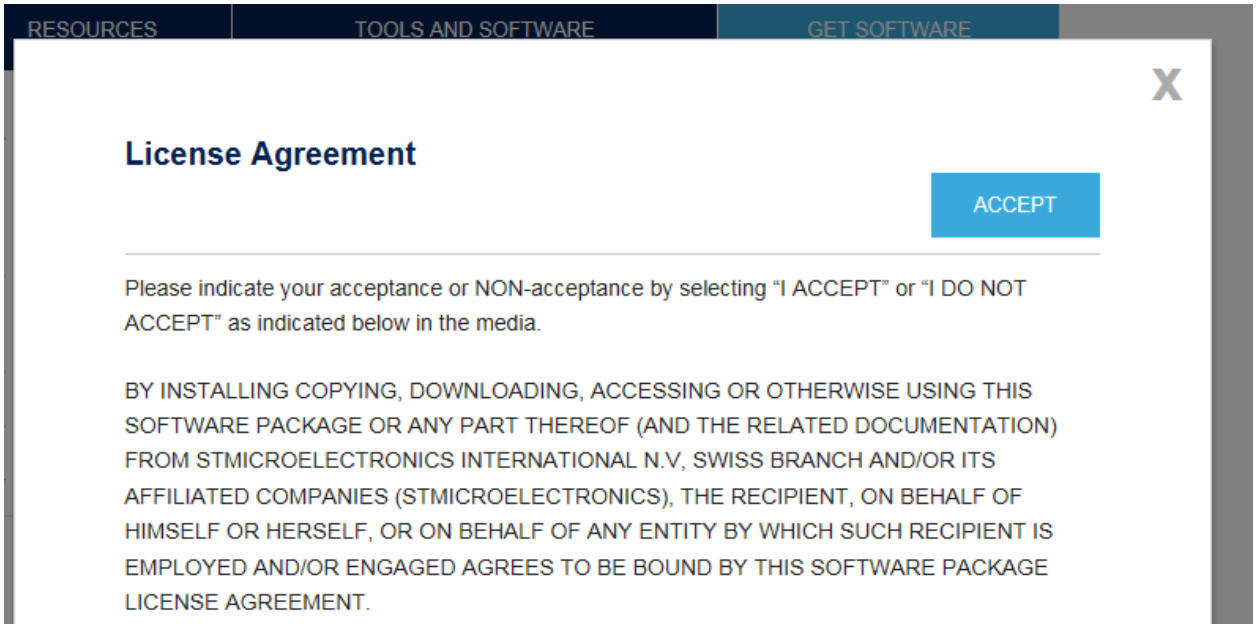


Click on: Get Software

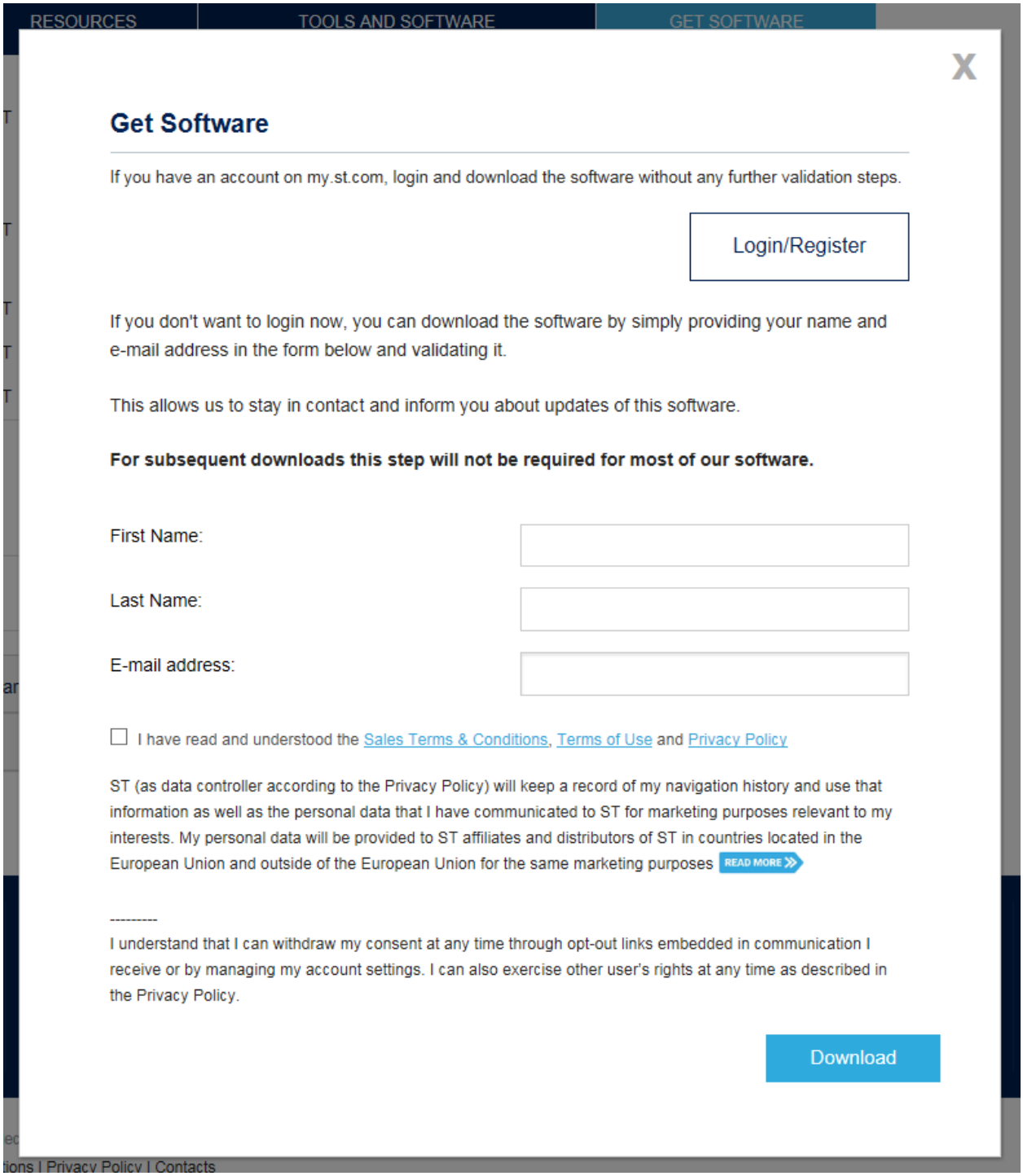
Get Software

Part Number	Software Version	Marketing Status	Supplier	Download
STM32CMonRFLin	2.3.0	Active	ST	Get Software
STM32CMonRFMac	2.3.0	Active	ST	Get Software
STM32CMonRFWin	2.3.0	Active	ST	Get Software

Click on: Get Software



Click on: ACCEPT


RESOURCES
TOOLS AND SOFTWARE
GET SOFTWARE
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:
Last Name:
E-mail address:
I have read and understood the Sales Terms & Conditions, Terms of Use and Privacy Policy
ST (as data controller according to the Privacy Policy) will keep a record of my navigation history and use that information as well as the personal data that I have communicated to ST for marketing purposes relevant to my interests. My personal data will be provided to ST affiliates and distributors of ST in countries located in the European Union and outside of the European Union for the same marketing purposes READ MORE

I understand that I can withdraw my consent at any time through opt-out links embedded in communication I receive or by managing my account settings. I can also exercise other user's rights at any time as described in the Privacy Policy.
Download

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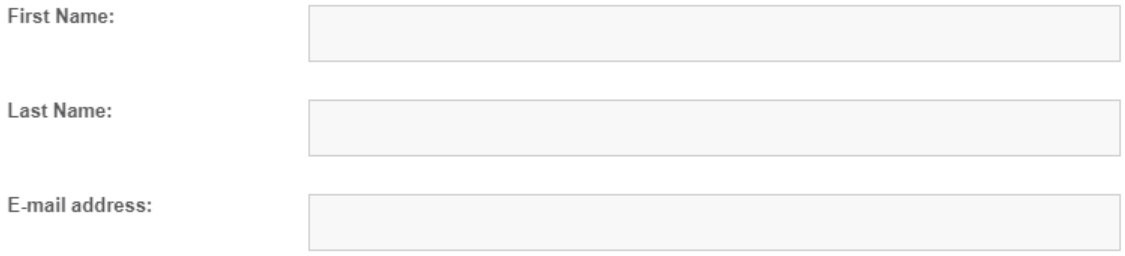
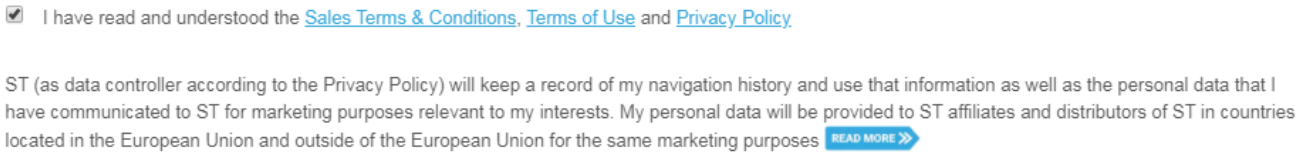
2. If you don't have one, create one by clicking on:

3. If you don't have an account and don't want to create one, fill in the information below:



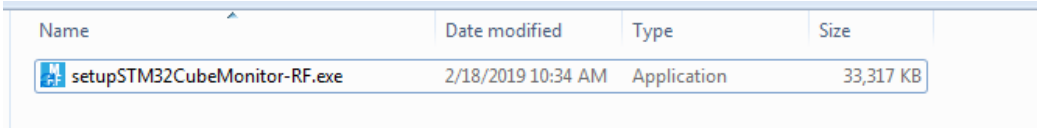
Click on the check box:



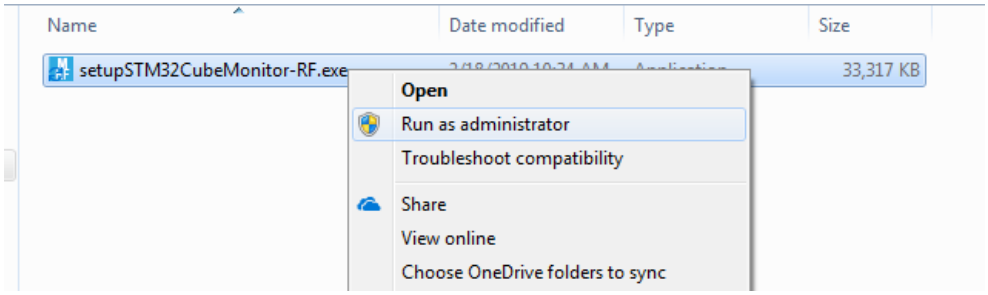
Then click:

Save the file at a location of your choice:

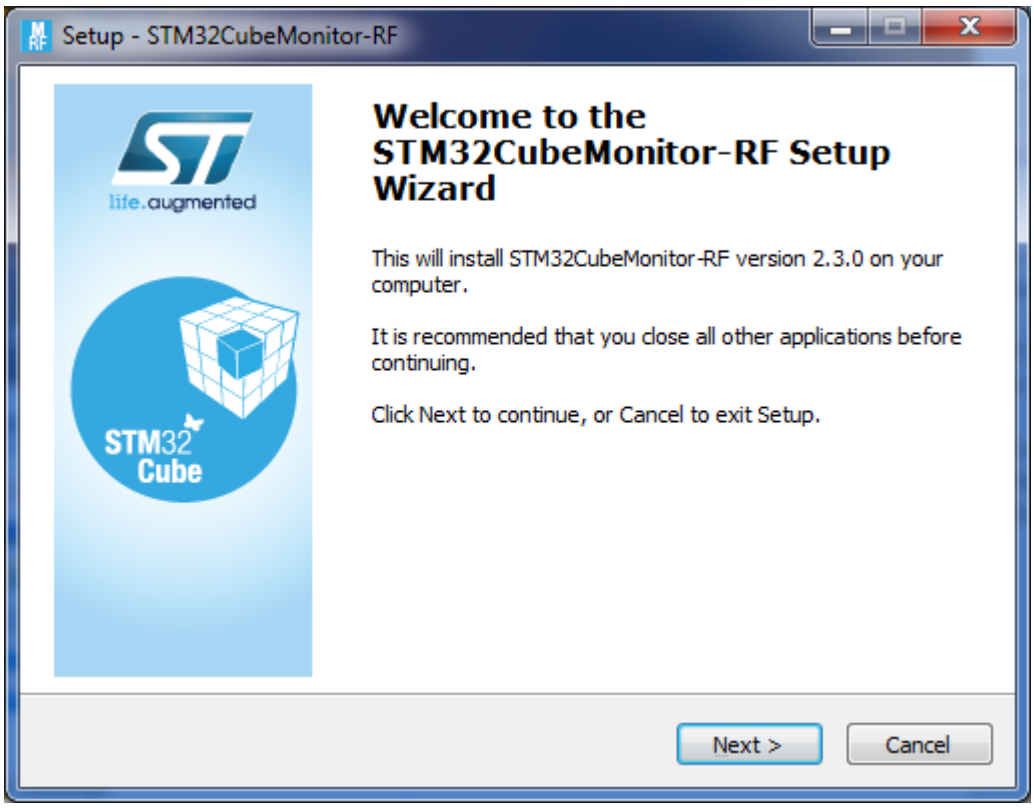
Unzip the file (en.stm32cmonrfwin.zip)



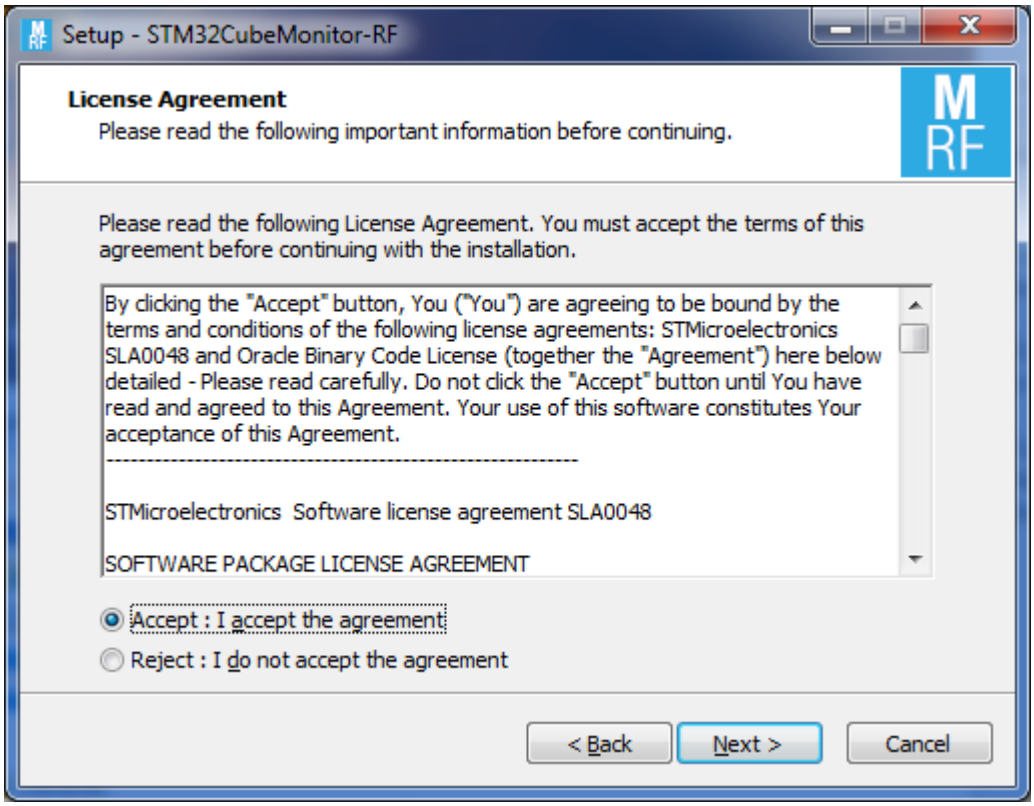
Right Click on setupSTM32CubeMonitor-RF.exe and Run as administrator


Name
Date modified
Type
Size
setupSTM32CubeMonitor-RF.exe
33,317 KB
Open
Run as administrator
Troubleshoot compatibility
Share
View online
Choose OneDrive folders to sync

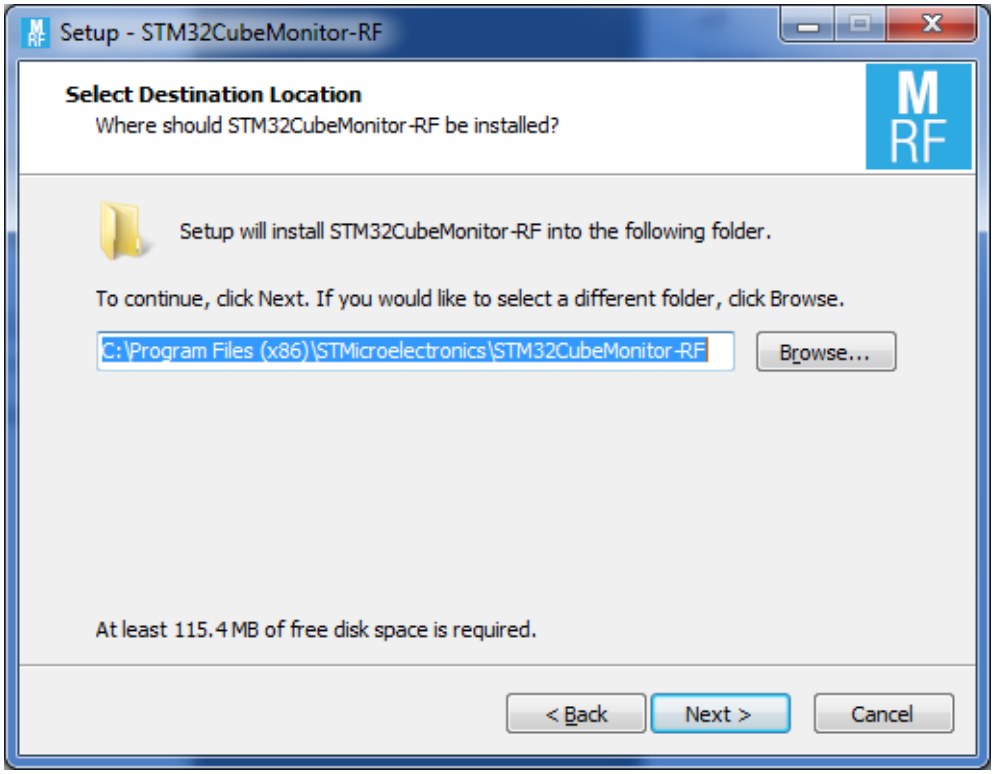
Click Next:


Setup - STM32CubeMonitor-RF
life.augmented
STM32 Cube
Welcome to the STM32CubeMonitor-RF Setup Wizard
This will install STM32CubeMonitor-RF version 2.3.0 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

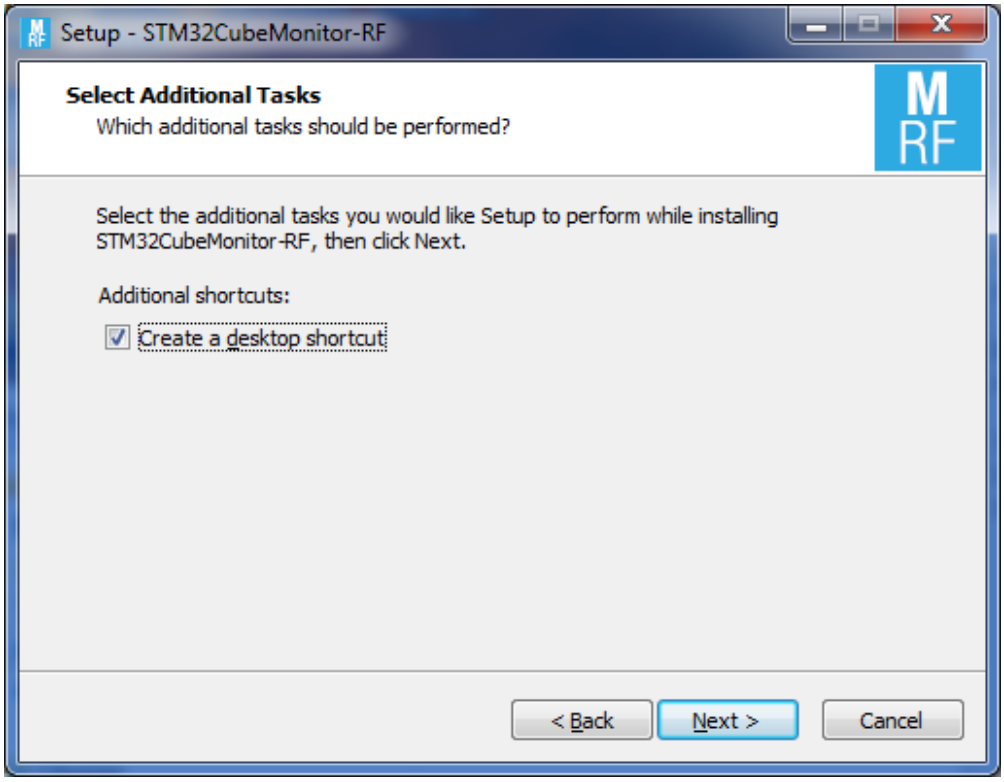
Accept the Terms and then click on Next:



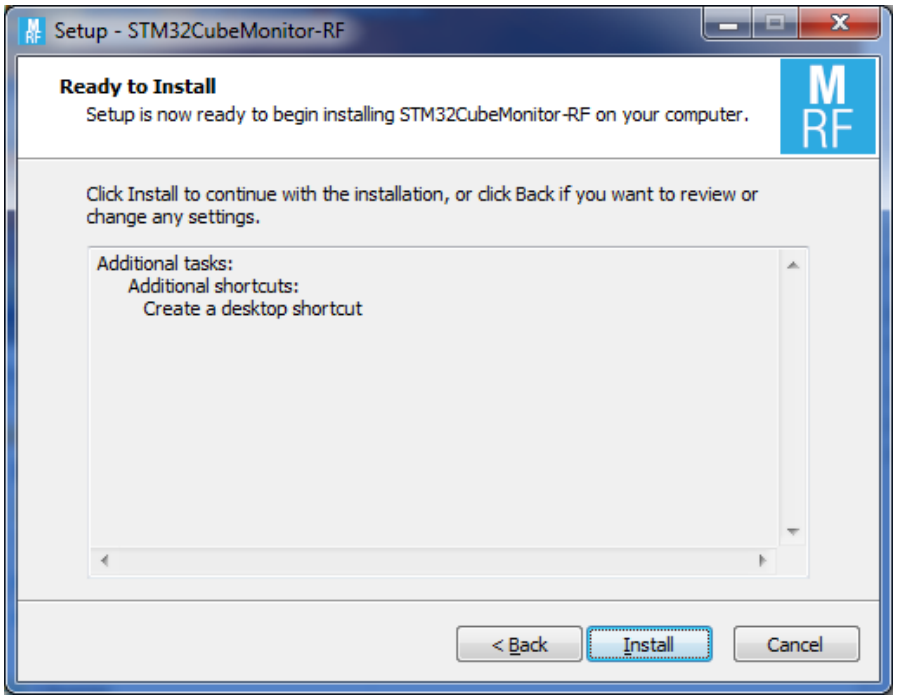
Select Destination Location and Click Next


Setup - STM32CubeMonitor-RF
Select Destination Location
Where should STM32CubeMonitor-RF be installed?
Setup will install STM32CubeMonitor-RF into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files (x86)\STMicroelectronics\STM32CubeMonitor-RF
Browse...
At least 115.4 MB of free disk space is required.
< Back
Next >
Cancel

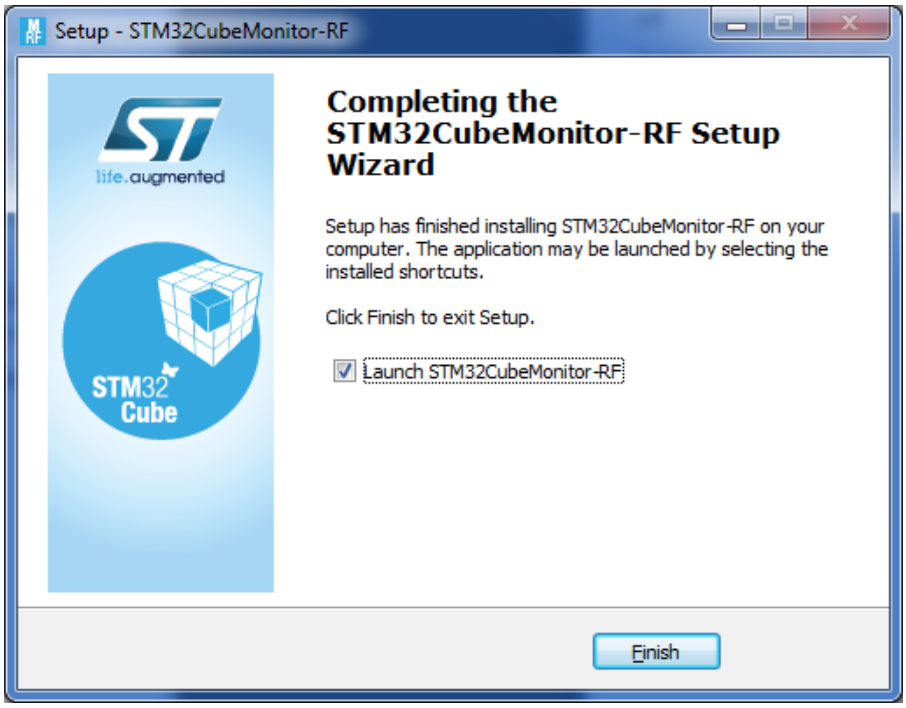
Click Next


Setup - STM32CubeMonitor-RF
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing STM32CubeMonitor-RF, then click Next.
Additional shortcuts:
Create a desktop shortcut
< Back
Next >
Cancel

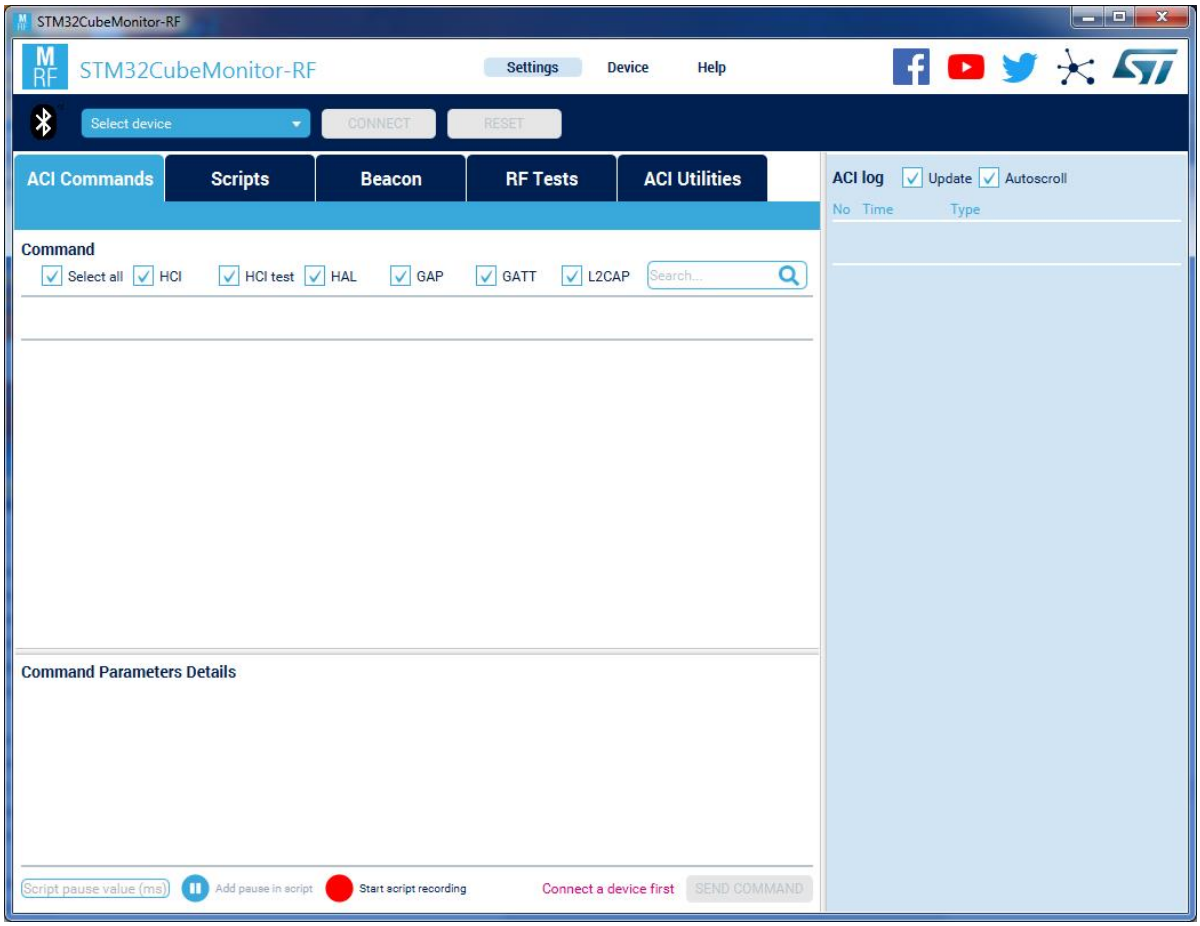
Click Install



Click Finish

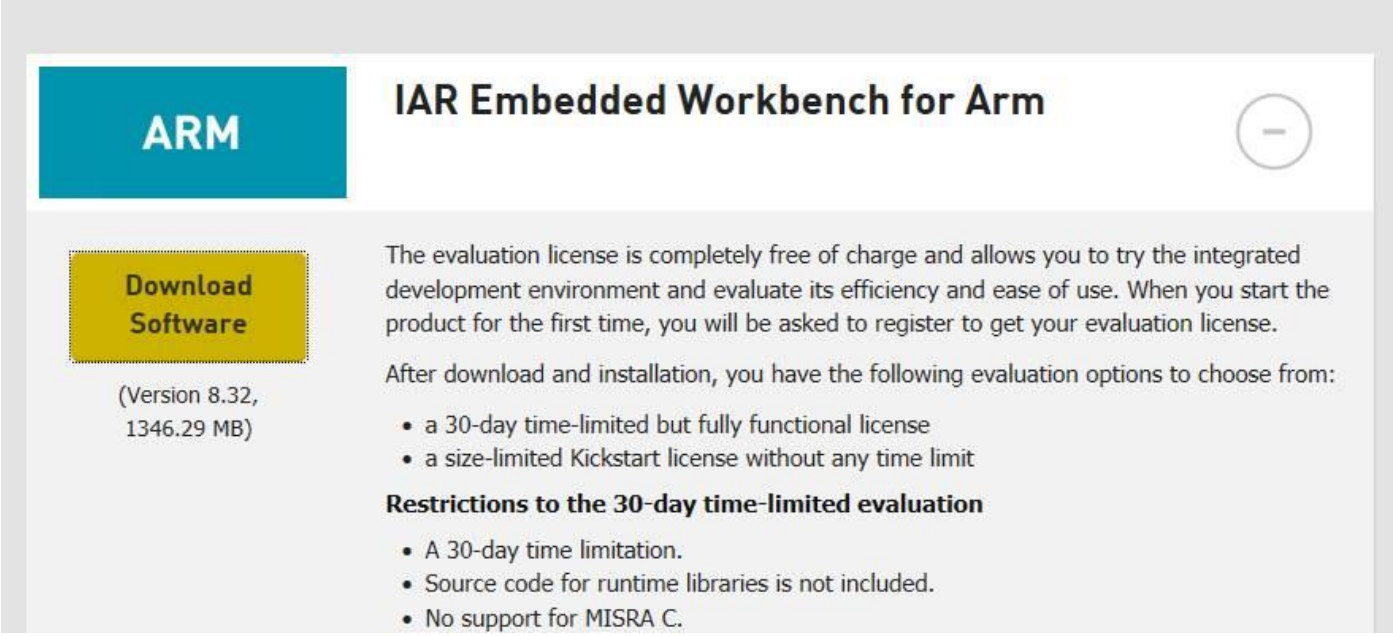


Open STM32CubeMonitor-RF to make sure it was installed properly.



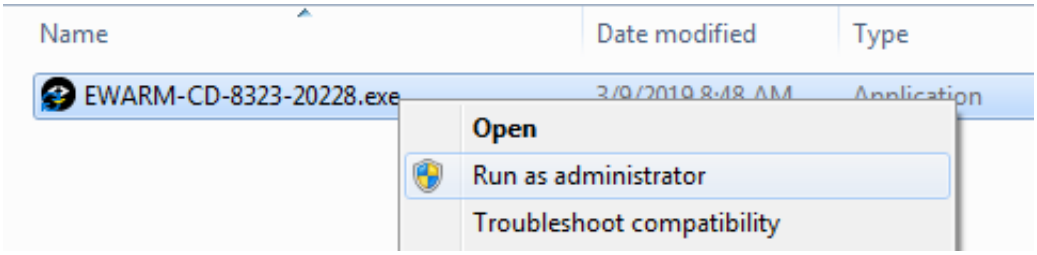
4- IAR IDE: IAR Embedded Workbench for ARM 8.32.3

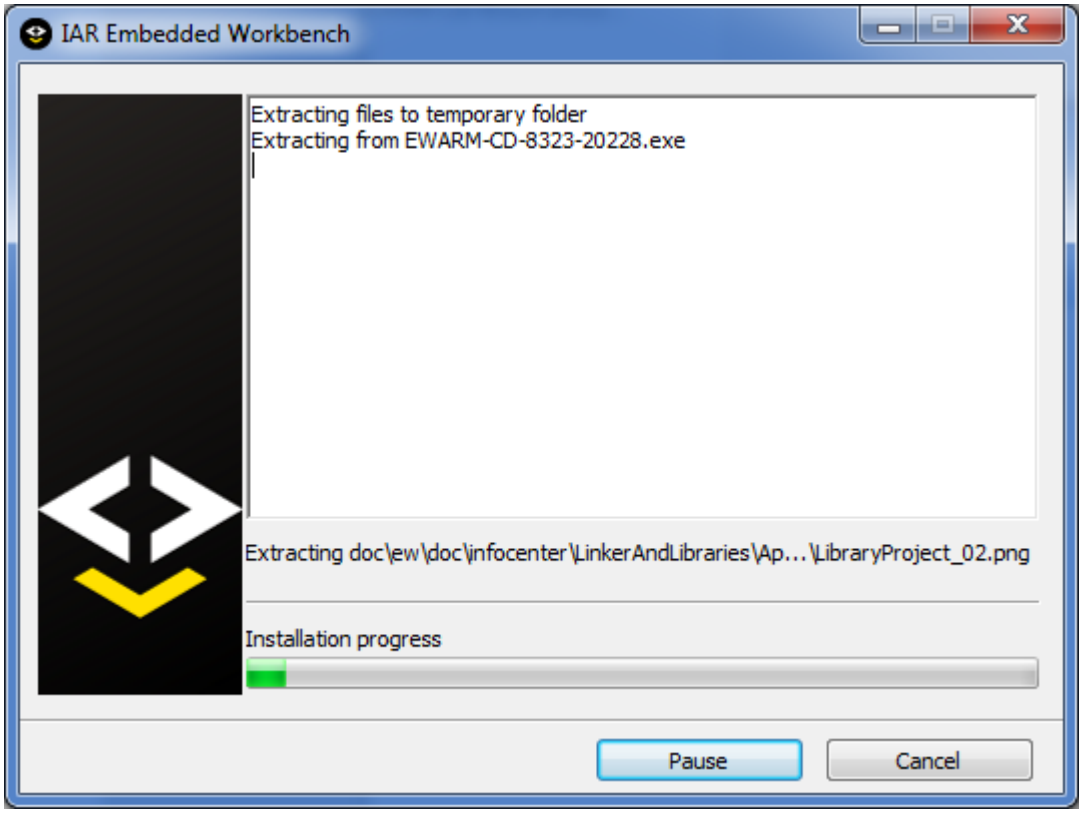
Click Link: IAR EWARM
Minimum version required: 8.32.3
Or use Direct Link: https://www.iar.com/iar-embedded-workbench/#!?currentTab=free-trials and click on the “Download Software” button in the IAR Embedded Workbench for ARM.



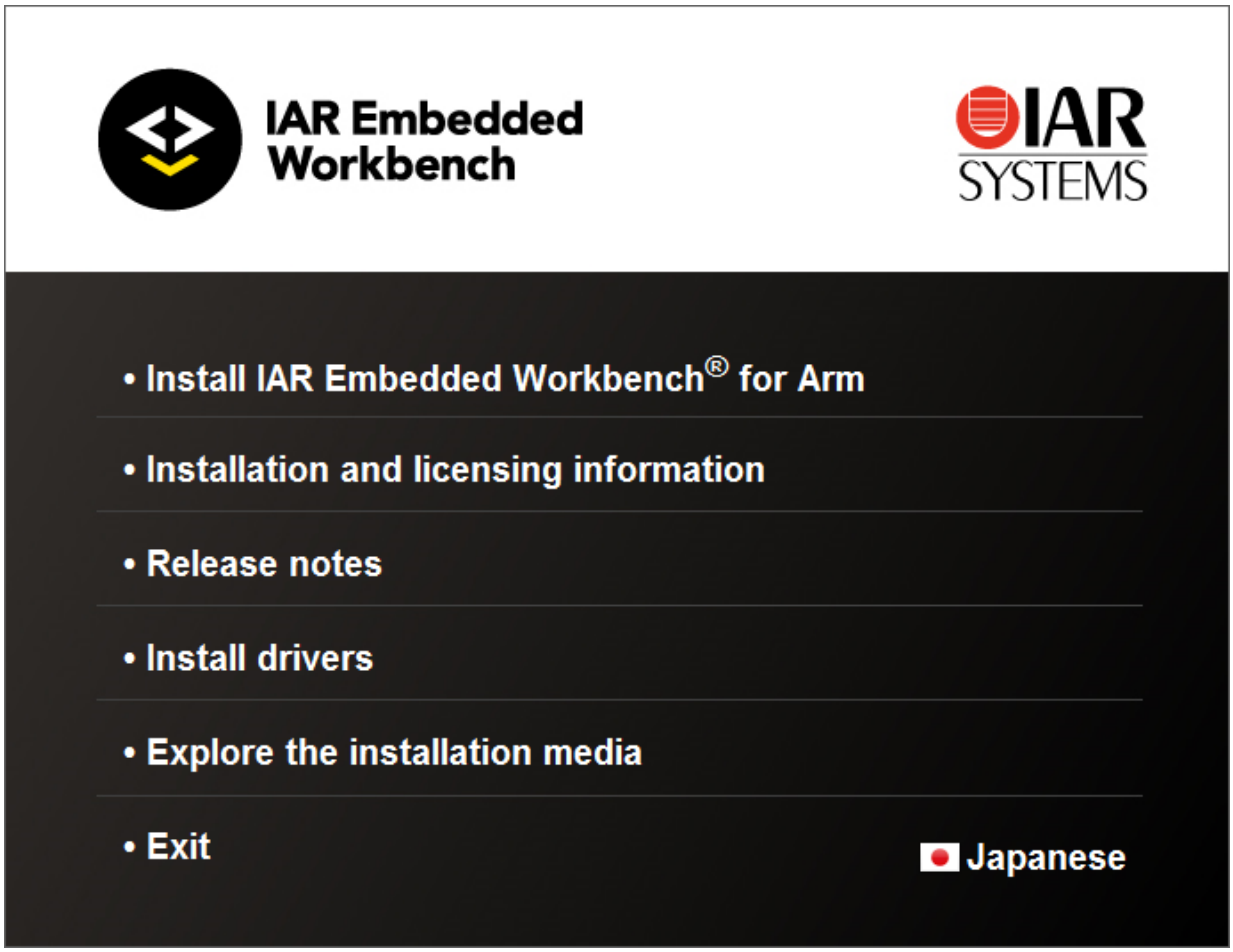
Save EWARM-CD-832x-xxxxx.exe at a location of your choice:

Right Click on EWARM-CD-832x-xxxxx.exe and Run as Administrator:

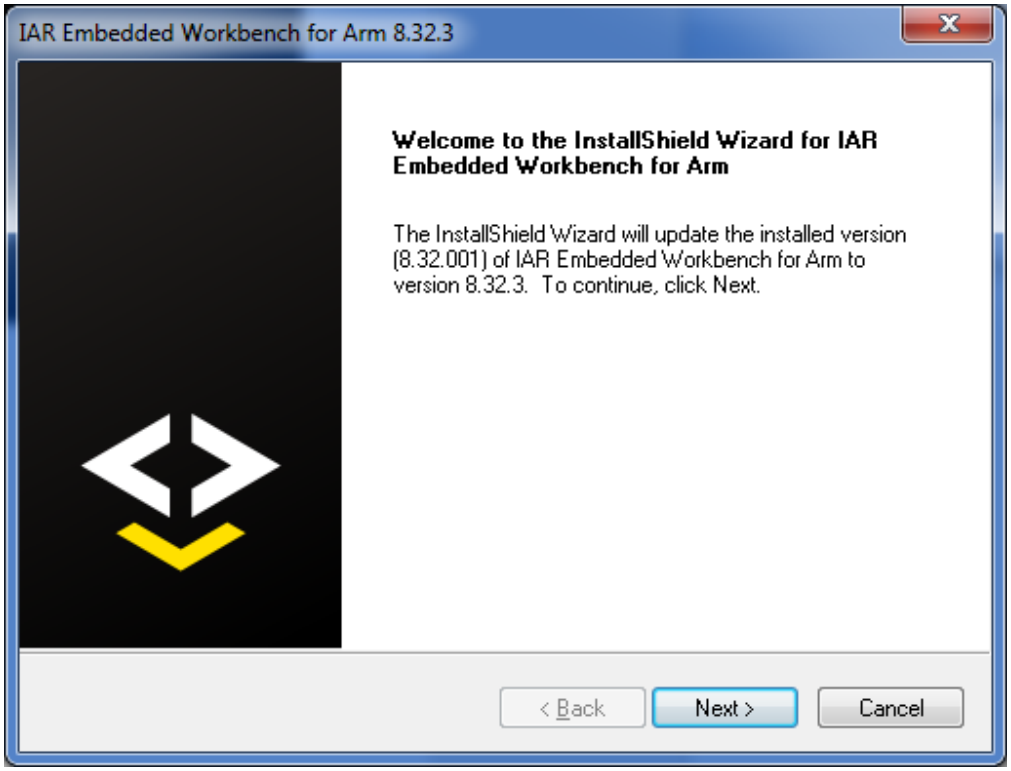


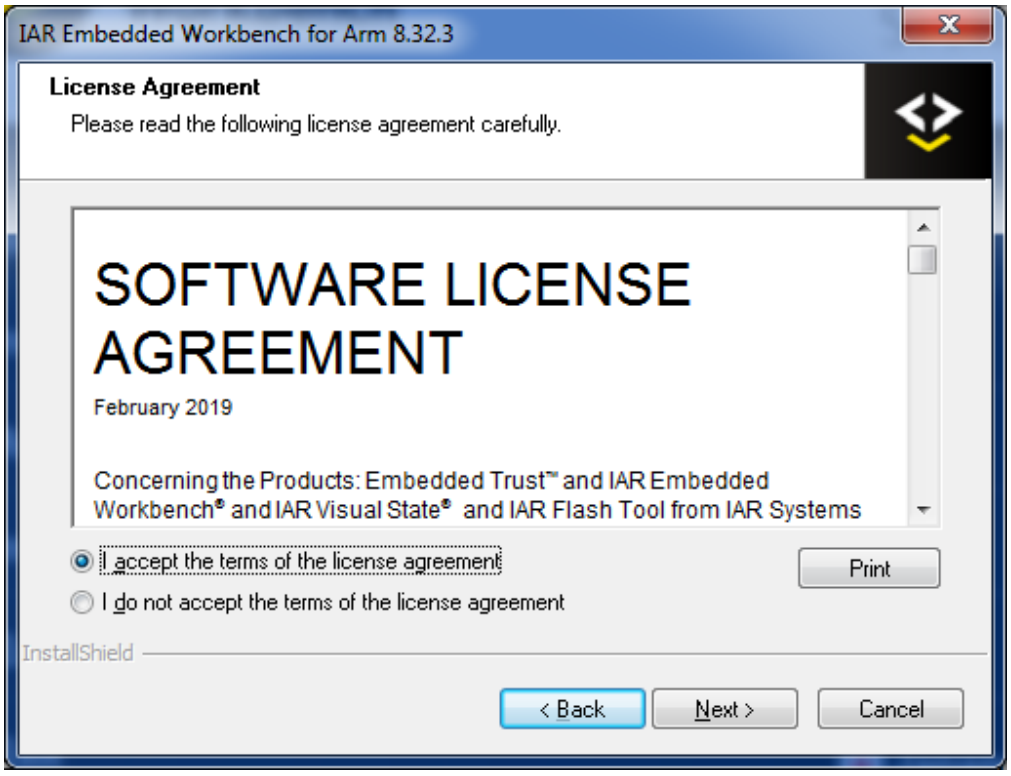

IAR Embedded Workbench
Extracting files to temporary folder
Extracting from EWARM-CD-8323-20228.exe
Extracting doc\ew\doc\infocenter\LinkerAndLibraries\Ap...\LibraryProject_02.png
Installation progress
Pause
Cancel

Click “Install IAR Embedded Workbench for ARM”:

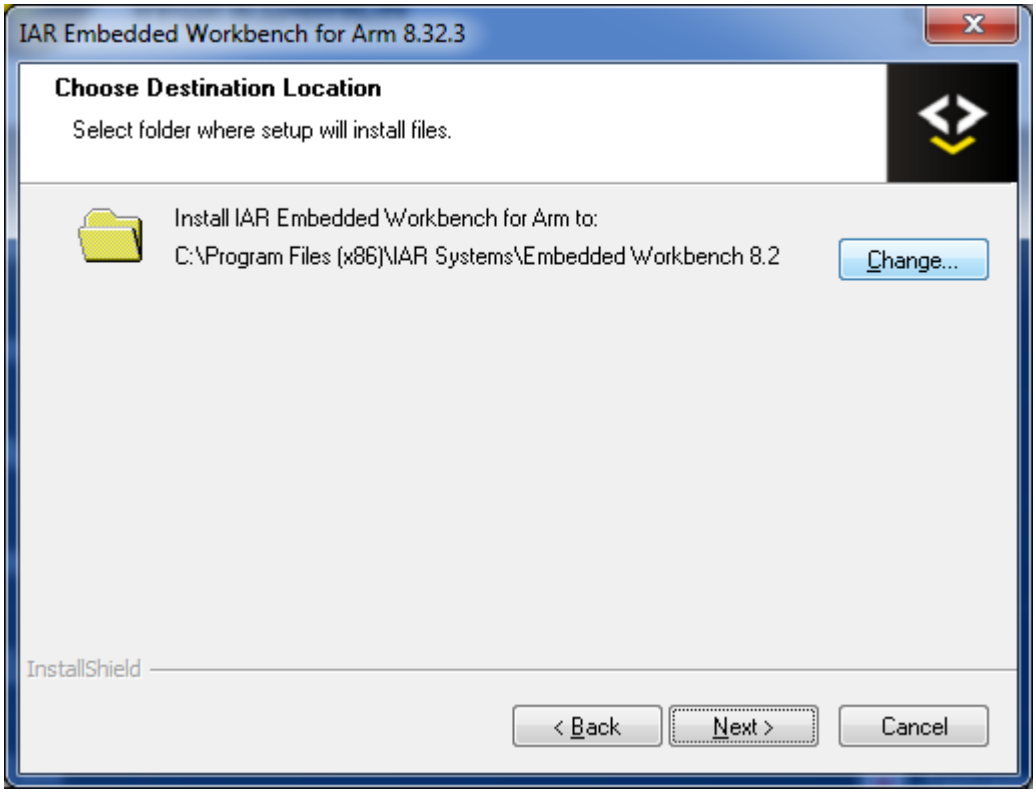


Click Next

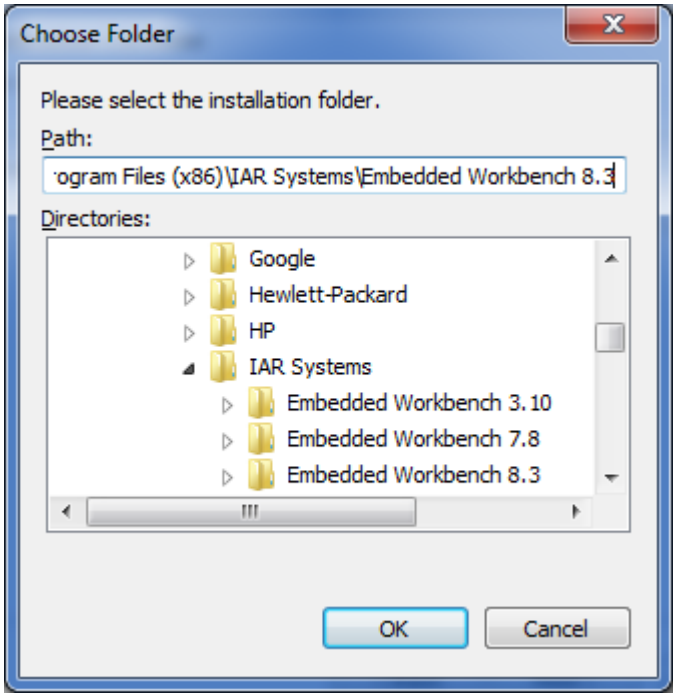

IAR Embedded Workbench for Arm 8.32.3
Welcome to the InstallShield Wizard for IAR Embedded Workbench for Arm
The InstallShield Wizard will update the installed version (8.32.001) of IAR Embedded Workbench for Arm to version 8.32.3. To continue, click Next.
< Back
Next >
Cancel


IAR Embedded Workbench for Arm 8.32.3
License Agreement
Please read the following license agreement carefully.
SOFTWARE LICENSE AGREEMENT
February 2019
Concerning the Products: Embedded Trust™ and IAR Embedded Workbench® and IAR Visual State® and IAR Flash Tool from IAR Systems
I accept the terms of the license agreement
I do not accept the terms of the license agreement
Print
InstallShield
< Back
Next >
Cancel

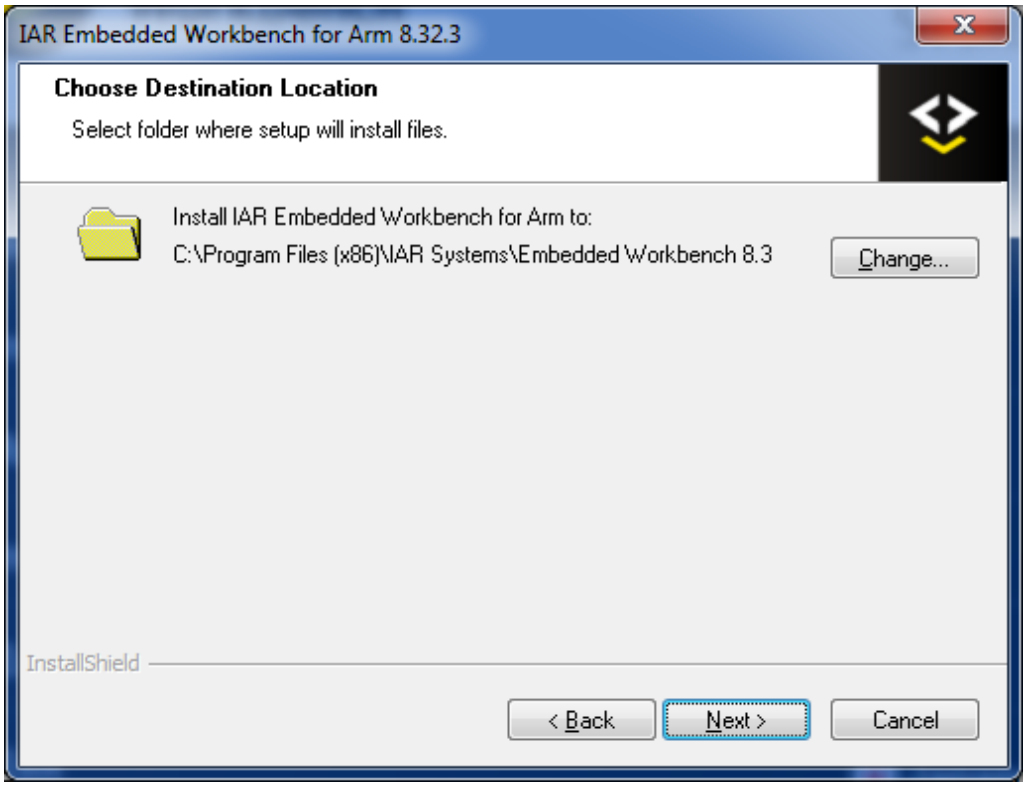
Choose Destination Location if one different from default is preferred. Click “Change” if a new location will be entered.



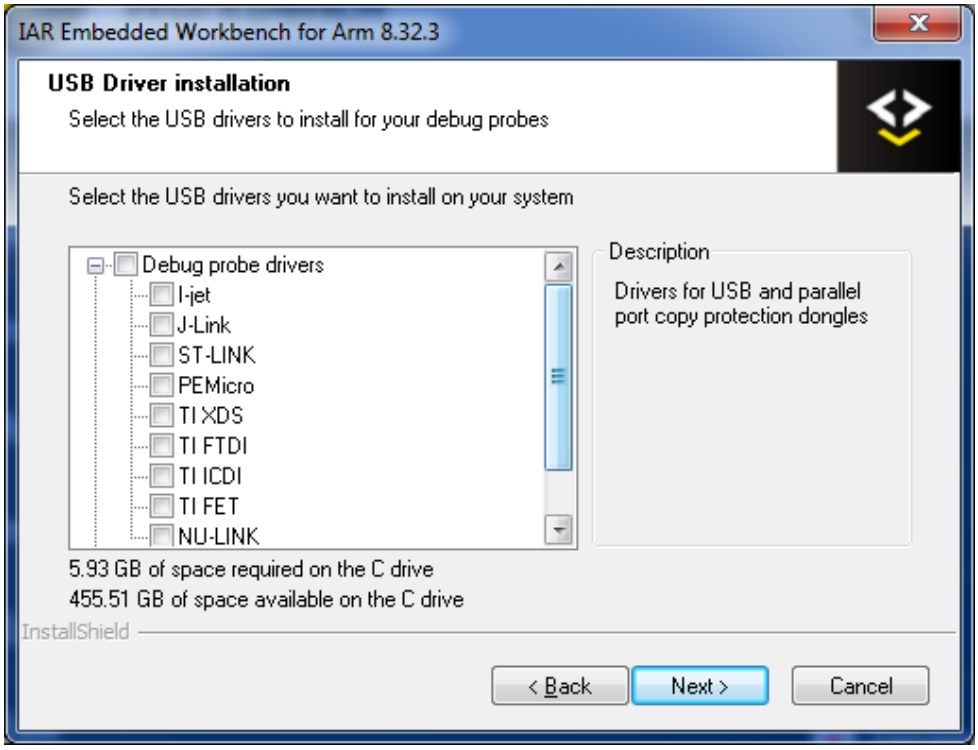
Set the preferred destination location and clock OK


Choose Folder
Please select the installation folder.
Path:
ogram Files (x86)\IAR Systems\Embedded Workbench 8.3
Directories:
Google
Hewlett-Packard
HP
IAR Systems
Embedded Workbench 3.10
Embedded Workbench 7.8
Embedded Workbench 8.3
OK
Cancel

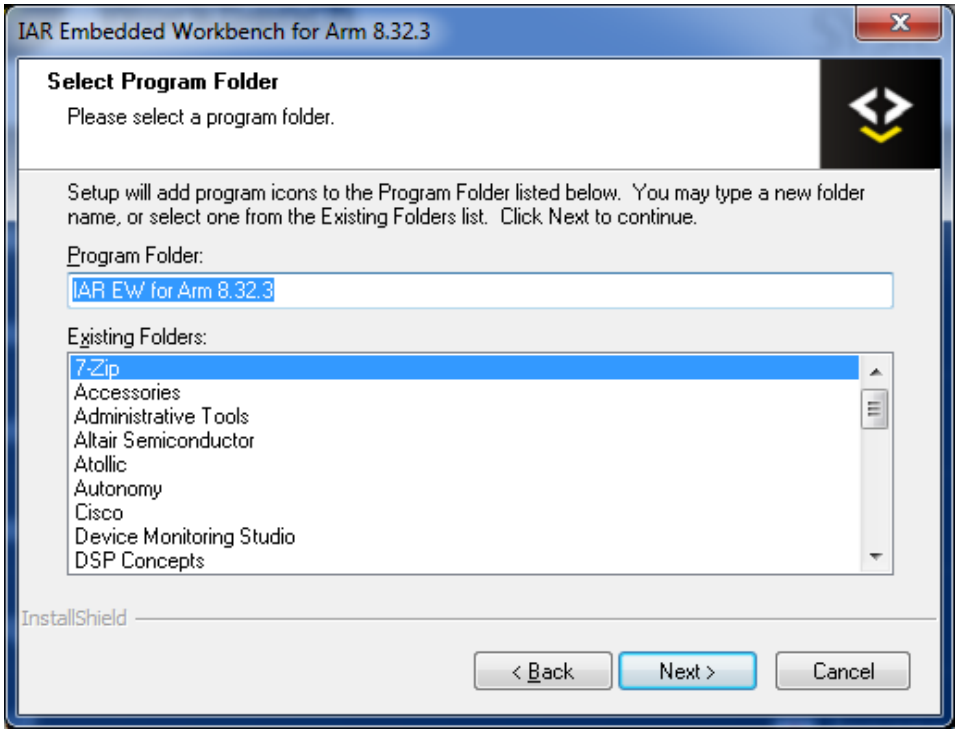
Click Next


IAR Embedded Workbench for Arm 8.32.3
Choose Destination Location
Select folder where setup will install files.
Install IAR Embedded Workbench for Arm to:
C:\Program Files (x86)\IAR Systems\Embedded Workbench 8.3
Change...
InstallShield
< Back
Next >
Cancel

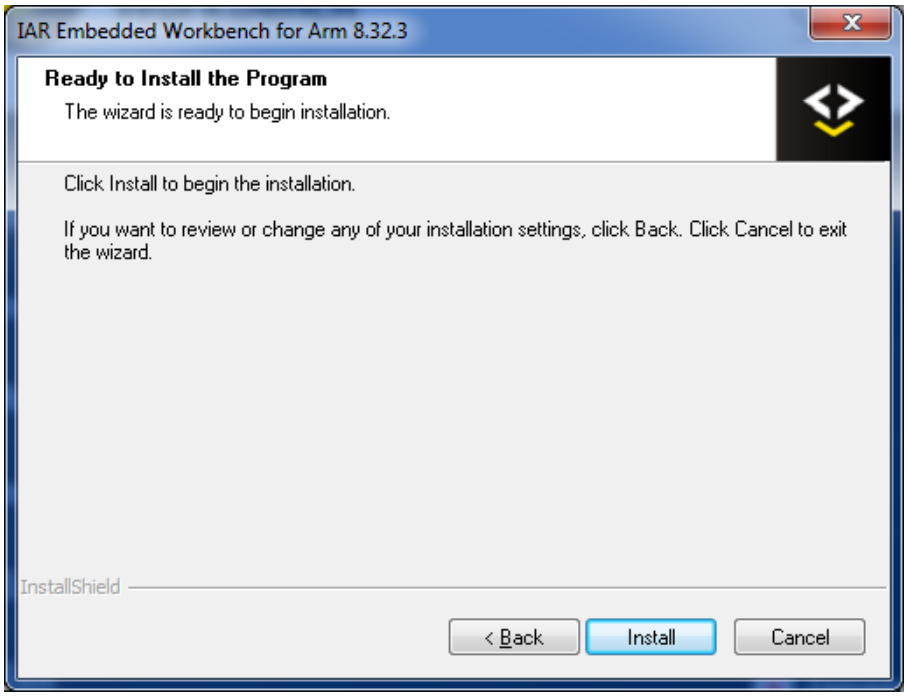
Uncheck all boxes and so no USB Drivers get installed. And click Next



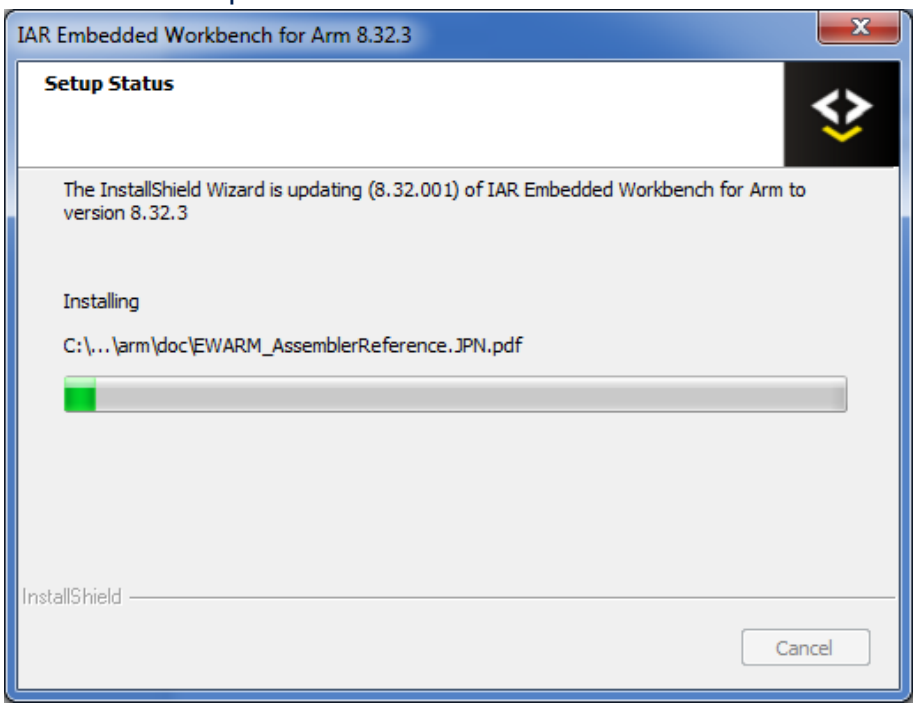
Leave Program Folder as default and Click Next



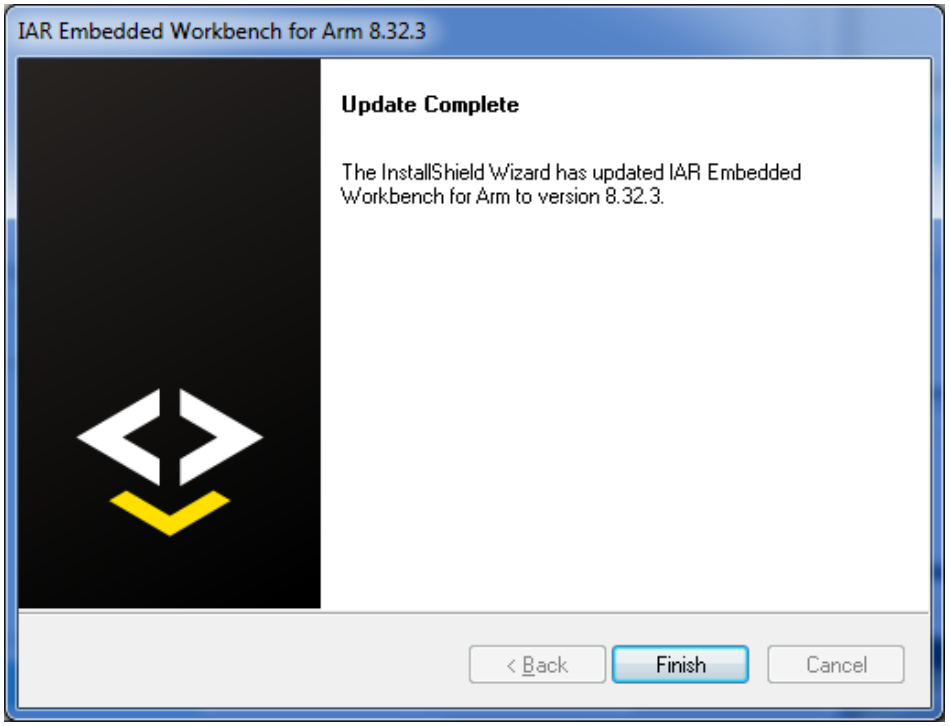
Click Install to begin Program Installation



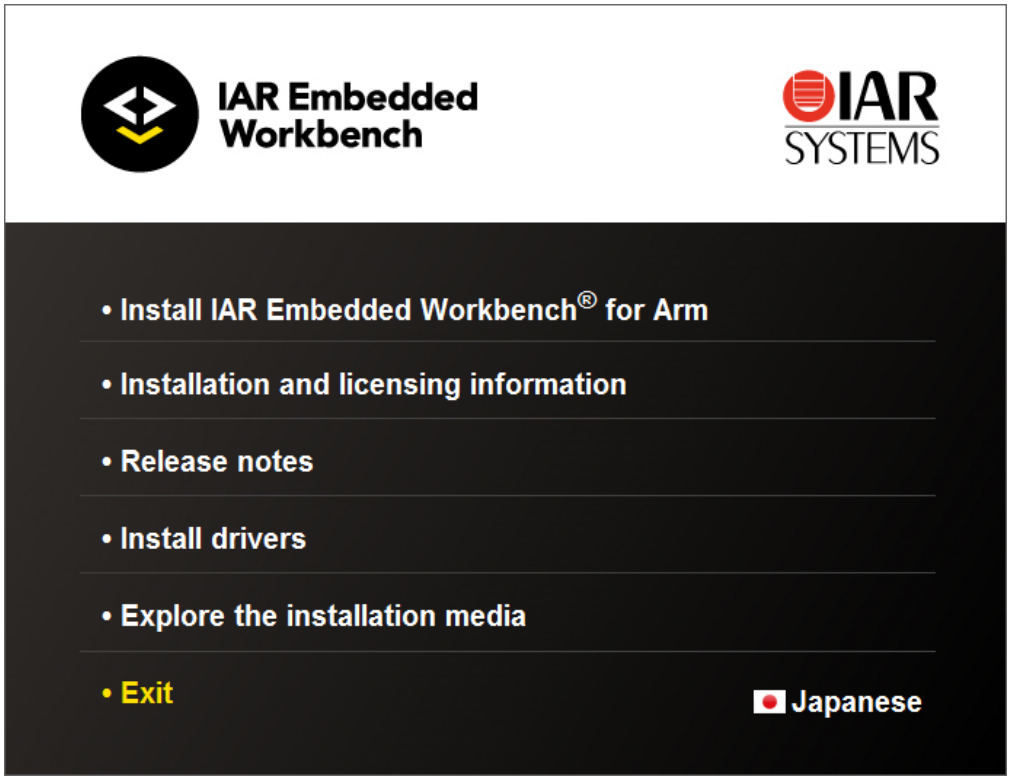
The installation process will start



Installation is now complete, Click Finish



Click “Exit” to close the IAR window.



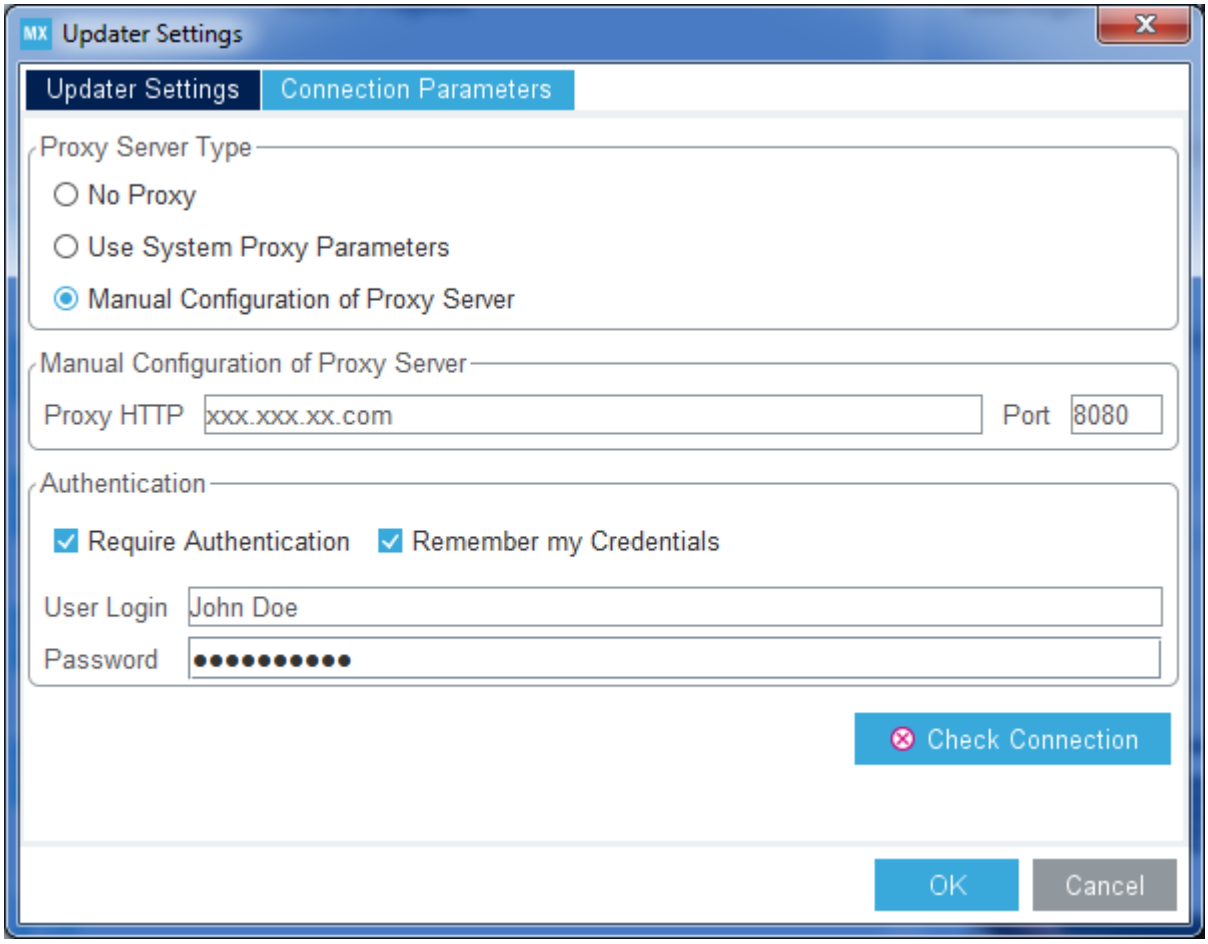
5- IAR License

IAR license activation instructions will be provided during the workshop.
Warning: If you don't already have a full IAR license installed, please do not install any temporary one until the day of the workshop, as a time limited license will be provided to you then.

6- STM32CubeWB: Install STM32Cube MCU Package for STM32WB series

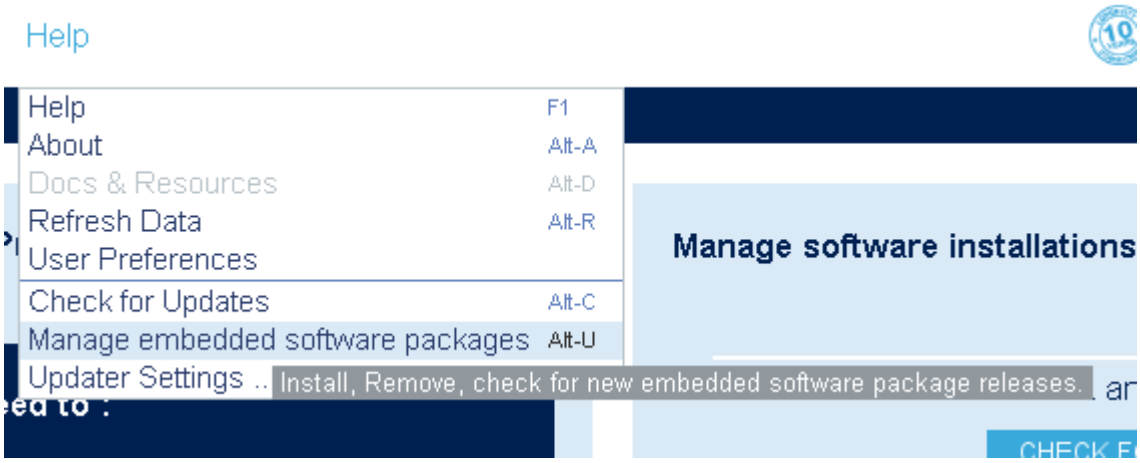
Double click on STM32CubeMX icon on your Desktop or look for it in your Start Menu:

Note: Use Help > Updater Settings > Connection Parameters to enter any proxy necessary for CubeMX to access the internet.



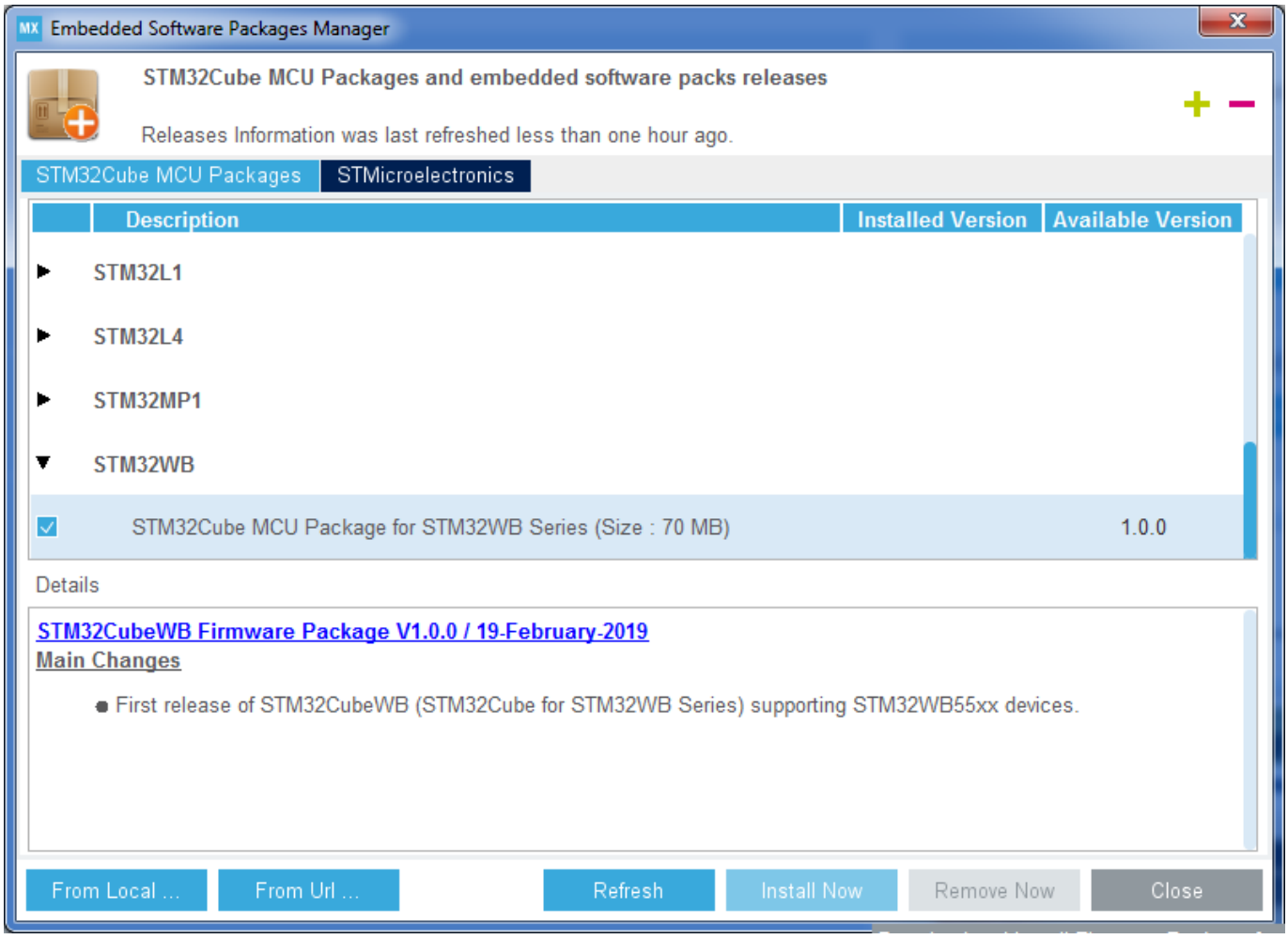
Note: For those behind a corporate firewall or having issue with installing the Cube Library from the internet, you can use “From local” to do an offline install of the STM32CubeWB Library, the offline installation is explained in Appendix at the end of this document.

From STM32CubeMX: Help -> Manage embedded software packages

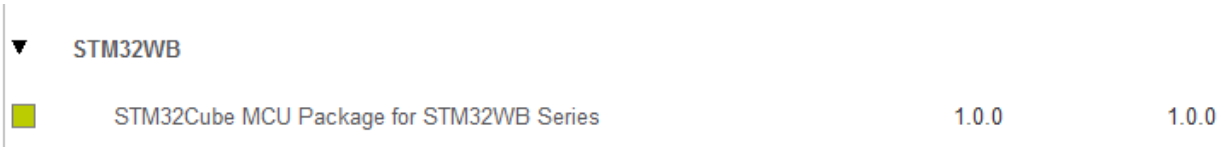


Click on Refresh:

Under STM32WB, expand then check the STM32 MCU Package for STM32WB and click Install Now



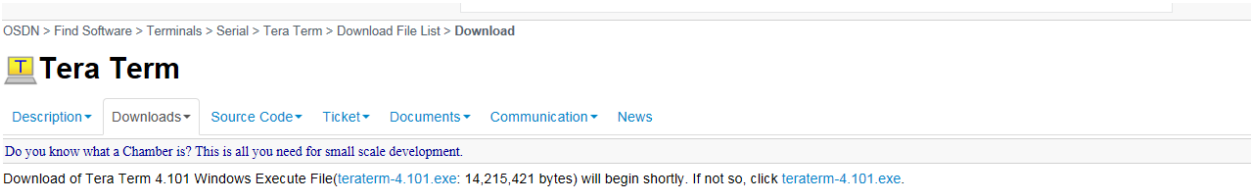
Once installed it should look like this:



7- Tera Term: Terminal software

In one of the labs we use a Terminal application to display printf output, any Terminal Software can be used; however, Tera Term is recommended.

Click Link: Tera Term
Current version used: 4.101
Or use Direct Link to install:
https://osdn.net/projects/ttssh2/downloads/70355/teraterm-4.101.exe/

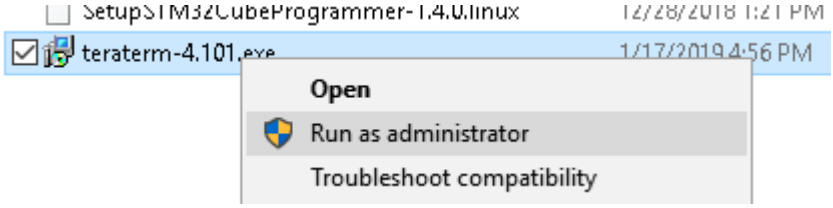


Click on:

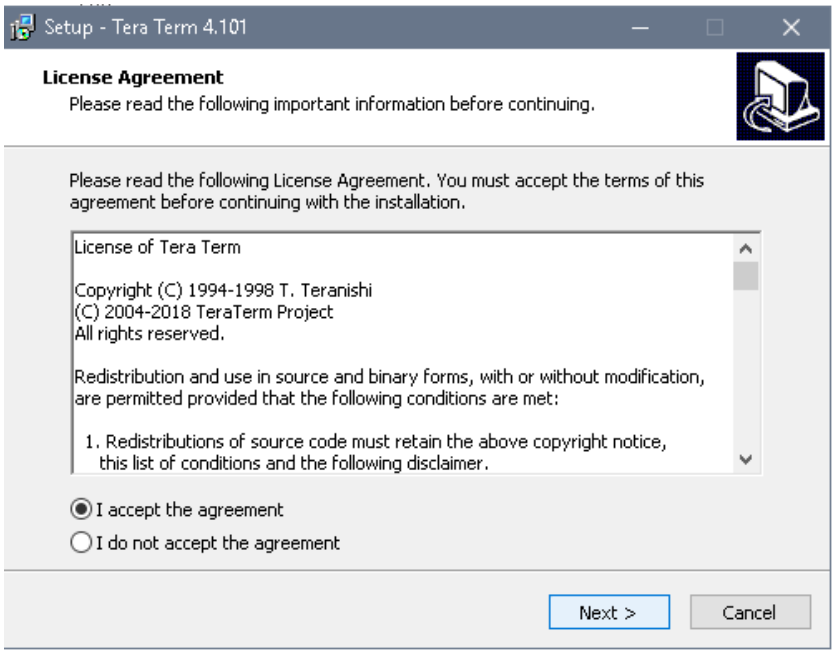
teraterm-4.101.exe.

Save teraterm-x.xxx.exe at your desired location:

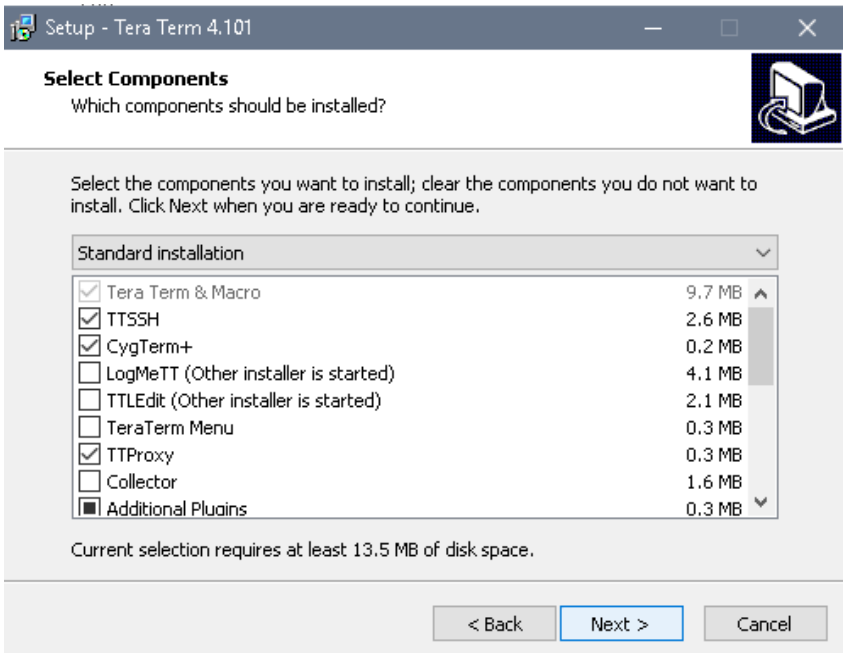
Right click and Run as administrator



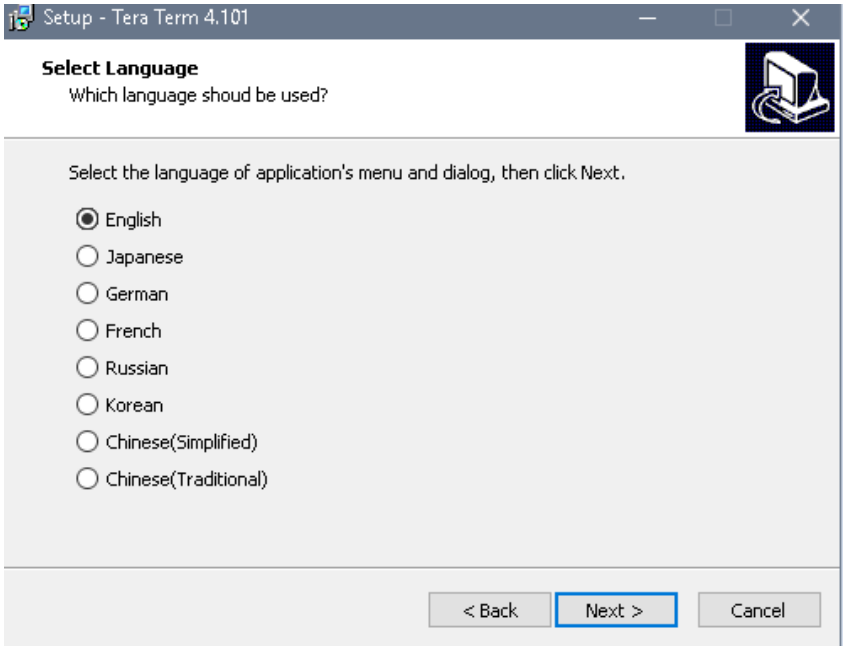
Accept and then click Next:



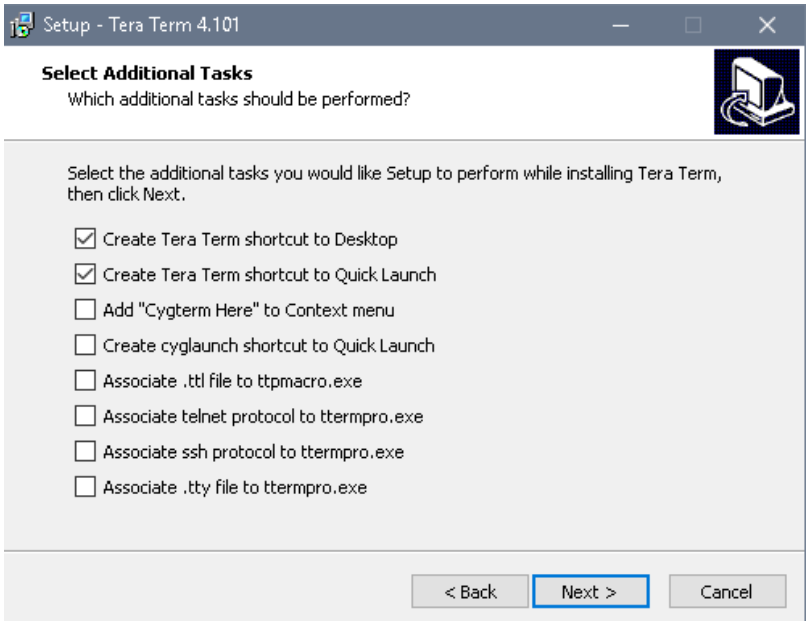
Keep the default settings and then click Next:



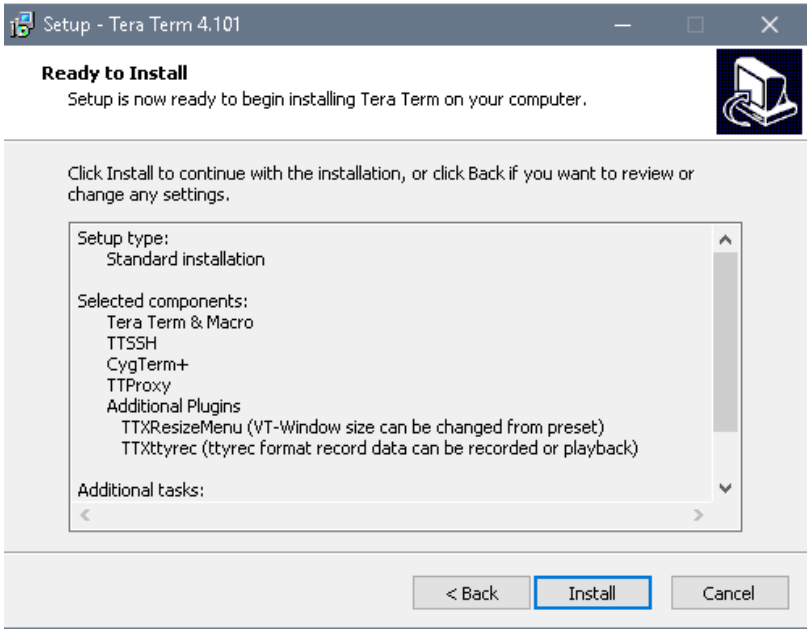
Select the language you want and then click Next:



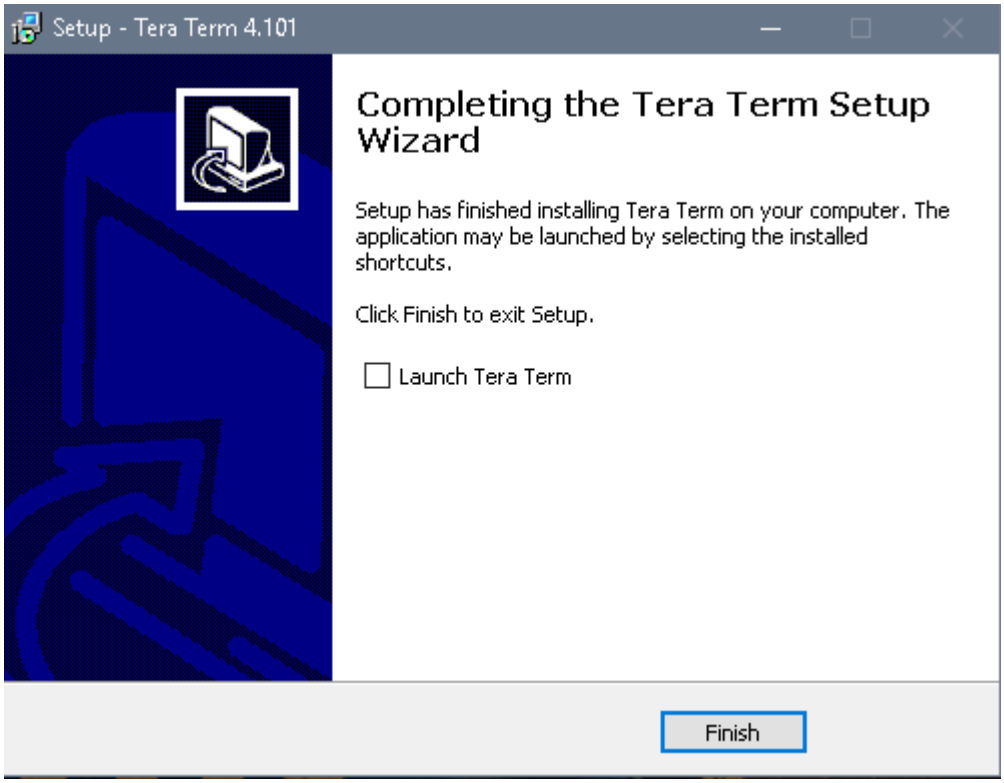
Keep the default settings and then click Next:



Click on Install:



Click on Finish:



8- ST BLE Sensor App: iOS or Android Smart Phone or Tablet App

In one of the labs we will use the ST BLE Sensor Smartphone/Tablet app.

Search for “ST BLE Sensor” app on the App Store:

Search for “ST BLE Sensor” app on the Google Play Store:

And install on your iOS or Android Smartphone or Tablet. **Note**: Make sure your device supports Bluetooth Low Energy (Bluetooth 4.0).

Or use Direct Link to install:
https://itunes.apple.com/us/app/st-ble-sensor/id993670214?mt=8
Current version used: 4.3.0

Or use Direct Link to install:
https://play.google.com/store/apps/details?id=com.st.bluems&hl=en_GB
Current version used: 4.3.0

9- Light Blue Explorer App: iOS or Android Smart Phone or Tablet App

In one of the labs we will use the Punch Through Design LightBlue Explorer Smartphone/Tablet app.

Search for “LightBlue” app on the App Store:

Search for “LightBlue” app on the Google Play Store:

And install on your iOS or Android Smartphone or Tablet. **Note**: Make sure your device supports Bluetooth Low Energy (BLE).

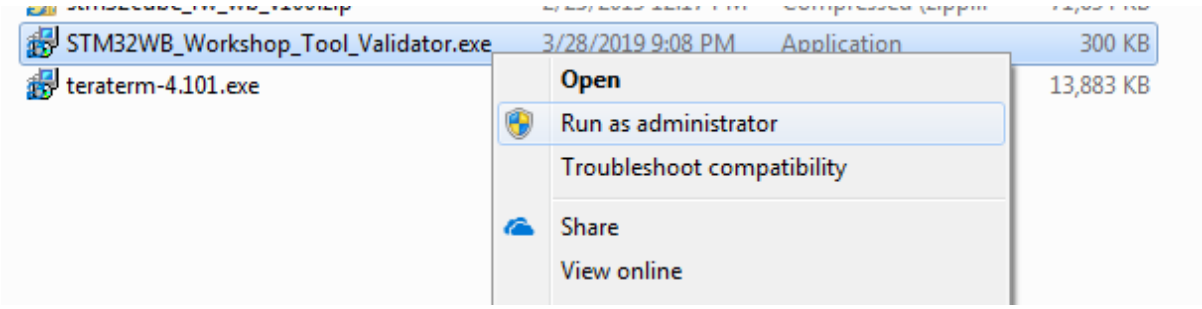
Or use Direct Link to install:
Current version used: 2.7.1
https://itunes.apple.com/us/app/lightblue-explorer/id557428110?mt=8

Current version used: 1.2
Or use Direct Link to install:
https://play.google.com/store/apps/details?id=com.punchthrough.lightblueexplorer

10- STM32WB Workshop – Tool Validator

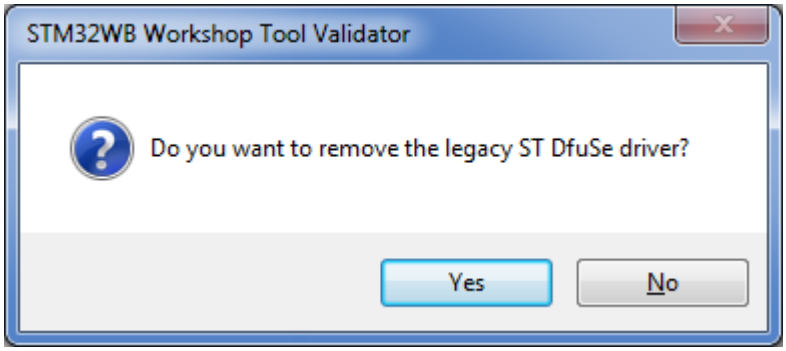
The tool called “STM32WB_Workshop_Tool_Validator.exe” will validate the installed software/software components/libraries/drivers that will be used in the Workshop. The Tool is included in the zip file “STM32WB_Workshop_Installation.zip”.

Launch the application “STM32WB_Workshop_Tool_Validator.exe” by Right clicking on the icon and Run as administrator:

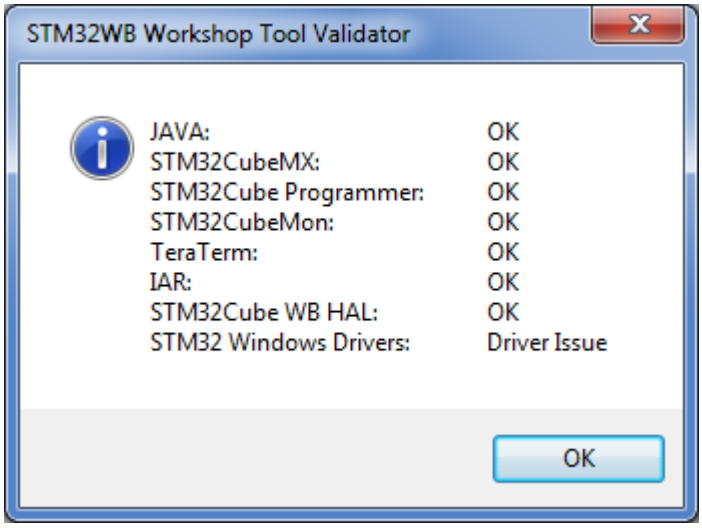


The tool will analyze your system and make sure that all the software/software components/libraries/drivers are installed correctly.

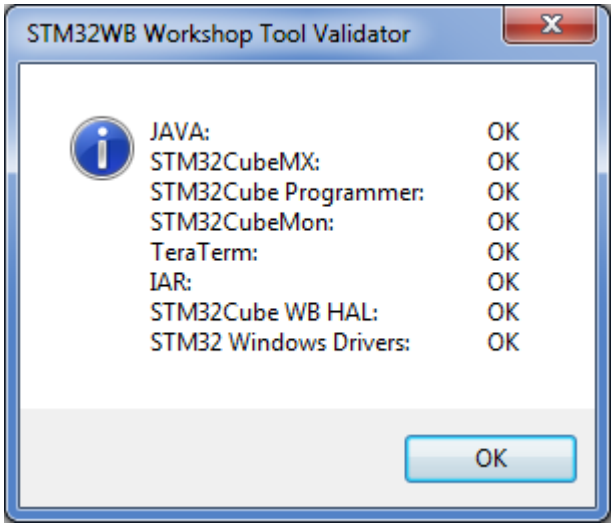
Note: When running the validator for the first time, you might get a pop up asking if you want to remove the legacy ST DfuSe driver from your system. You will get this if you happened to have installed our legacy DfuSe Utility on your machine in the past. Recently, ST has released the STM32CubeProgrammer Utility, which we'll be using in this workshop, and in order for this new utility to work, it is necessary to uninstall the old legacy DfuSe driver by clicking 'Yes'. If you're still actively working with the legacy DfuSe utility and its driver, please proceed to remove the driver anyways, and at the end of the workshop, you may reinstall it again.



If you don't remove the legacy driver or any of the three drivers (ST-Link Debug, VCP, and Bridge driver), that are installed with STM32CubeProgrammer, are missing, the summary window will show "Driver Issue" indicating a problem.



If the full install was successful, you will see this:

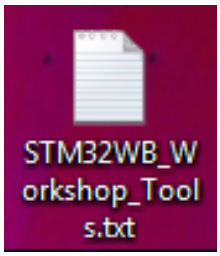


If you did not get all OKs please refer to the important notes on the next page.

All the software, software components, libraries, and drivers above are marked as OK, meaning that the installs were completed successfully.

If you don’t see OK in every field that means that either the software, software component, libraries, or the drivers were not installed properly, were not installed at all or that the wrong version was installed on your system. If it is marked other than OK, you will need to install or re-install by going back to the related procedure step(s) in this document.

If you still have issues with the install, please refer to the generated log report file (STM32WB_Workshop_Tools.txt) created on your Desktop by the Tool Validator:



It provides more information about the install of the Workshop material that might be helpful to determine the issue.

Important notes about “STM32WB_Workshop_Tool_Validator.exe”: this is a basic application to help validate the tool installation. It has some limitations as follows:

1. When multiple instances of a tool are installed in different directories, the Tool Validator only checks the version of the one at the default path.

2. Regarding the STM32CubeWB Library, the Tool Validator is only able to detect and report if version 1.0.0 is installed. If version 1.0.0 is not installed and a newer version is (i.e. 1.1.0), the tool will report that the library is not installed. This message can be ignored as long as a newer version of the library is installed.

If you still have issues please contact ST by entering an online support request (OLS) at:
https://my.st.com/ols
Enter a New Request and use “**STM32WB Workshop Installation**” for the Subject.
Please describe in details the issue encountered and also attach the log file from the Tool Validator (STM32WB_Workshop_Tools.txt).

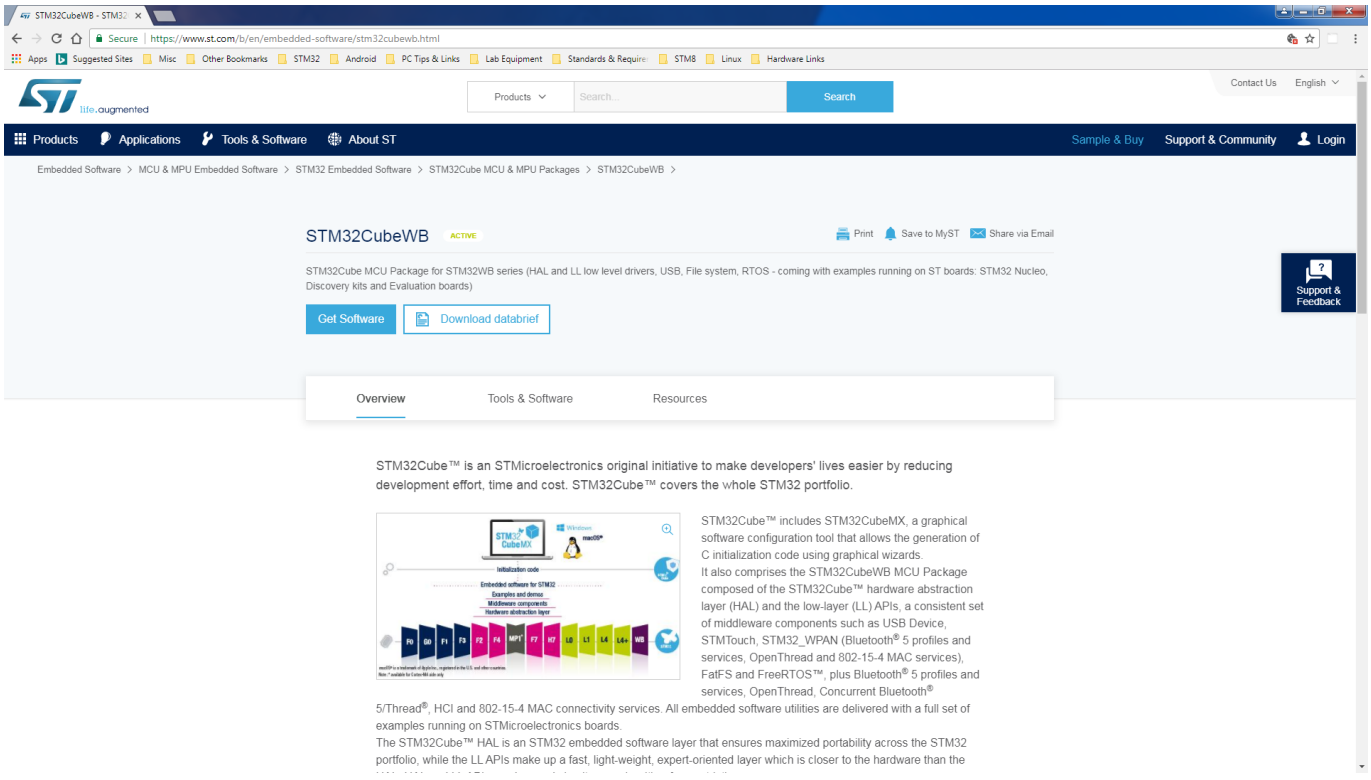
Appendix: STM32CubeWB Firmware Library offline installation

You only need to do this step if you were not able to do install of the STM32CubeWB from STM32CubeMX in the step 6 of this document.

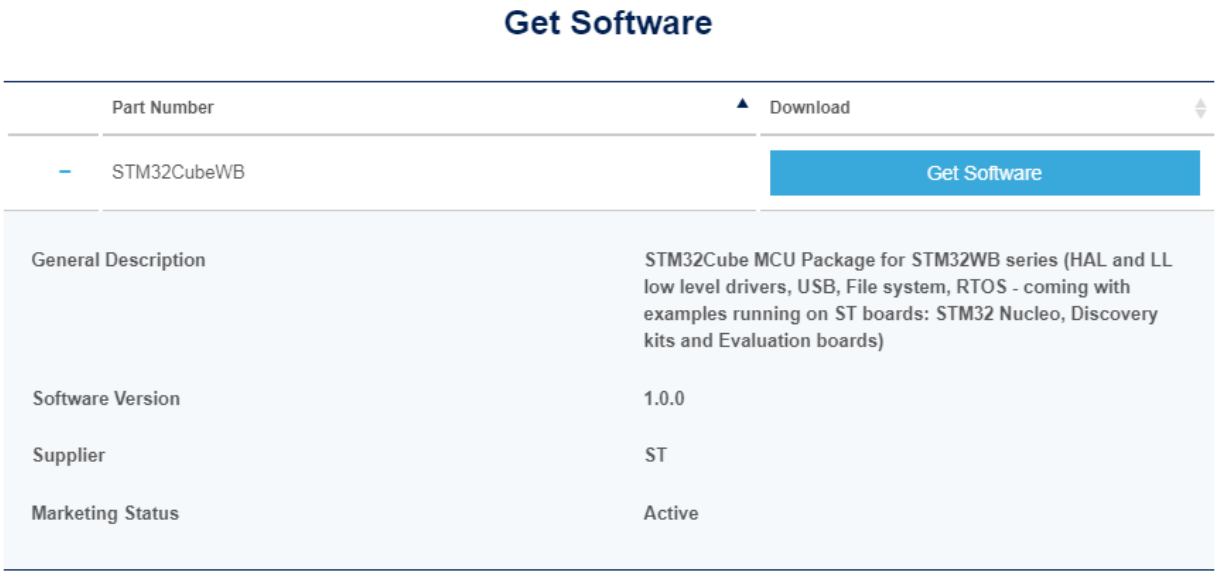
For those behind a corporate firewall or having issues with installing the Cube Library, you can use “From local” to do an offline install as explained here:

Go to this link to download the STM32CubeWB Library:

Click Link: STM32CubeWB
Minimum version required: 1.0.0
Or use Direct Link to install:
https://www.st.com/en/embedded-software/stm32cubewb.html

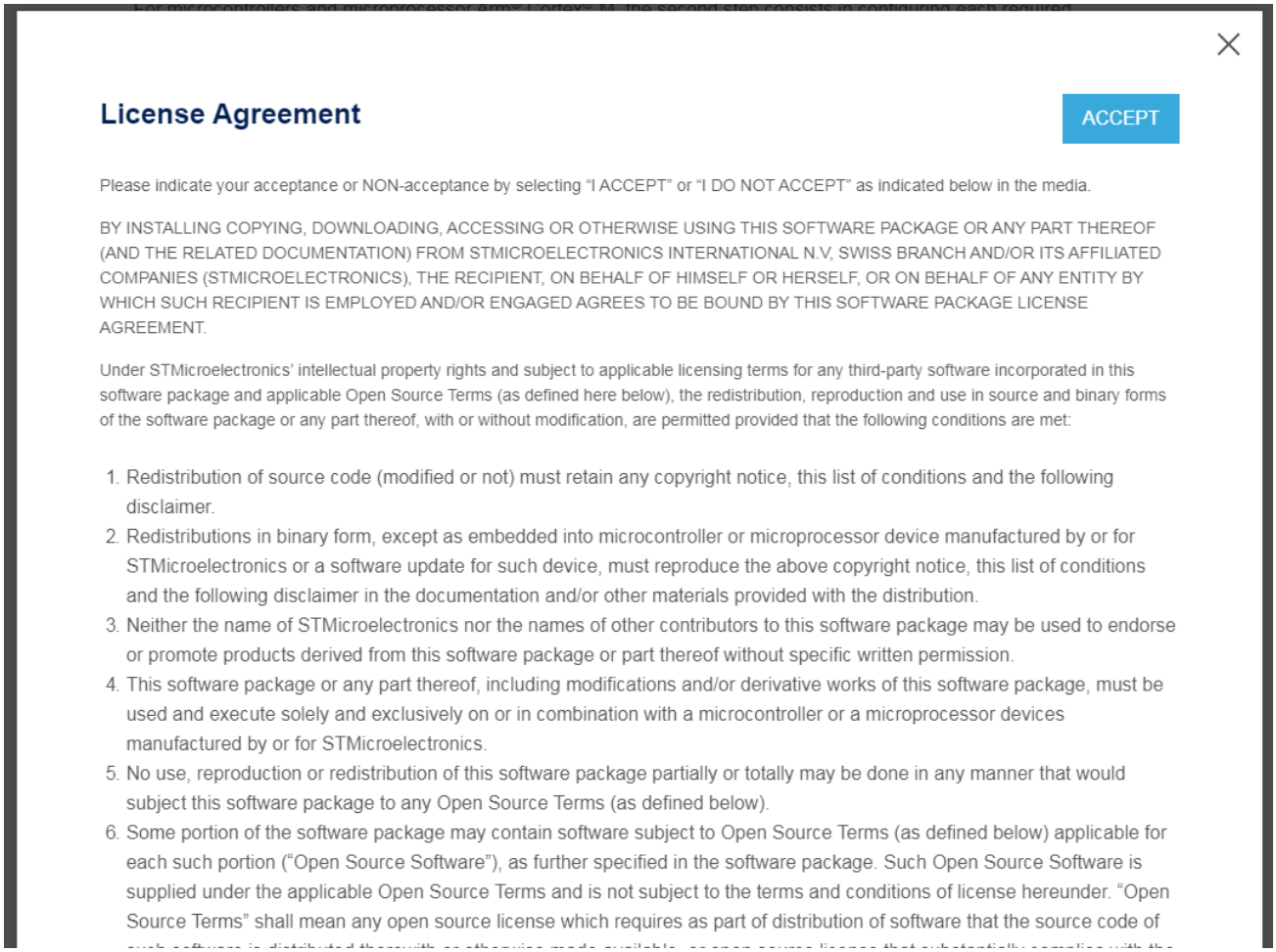


Click on:

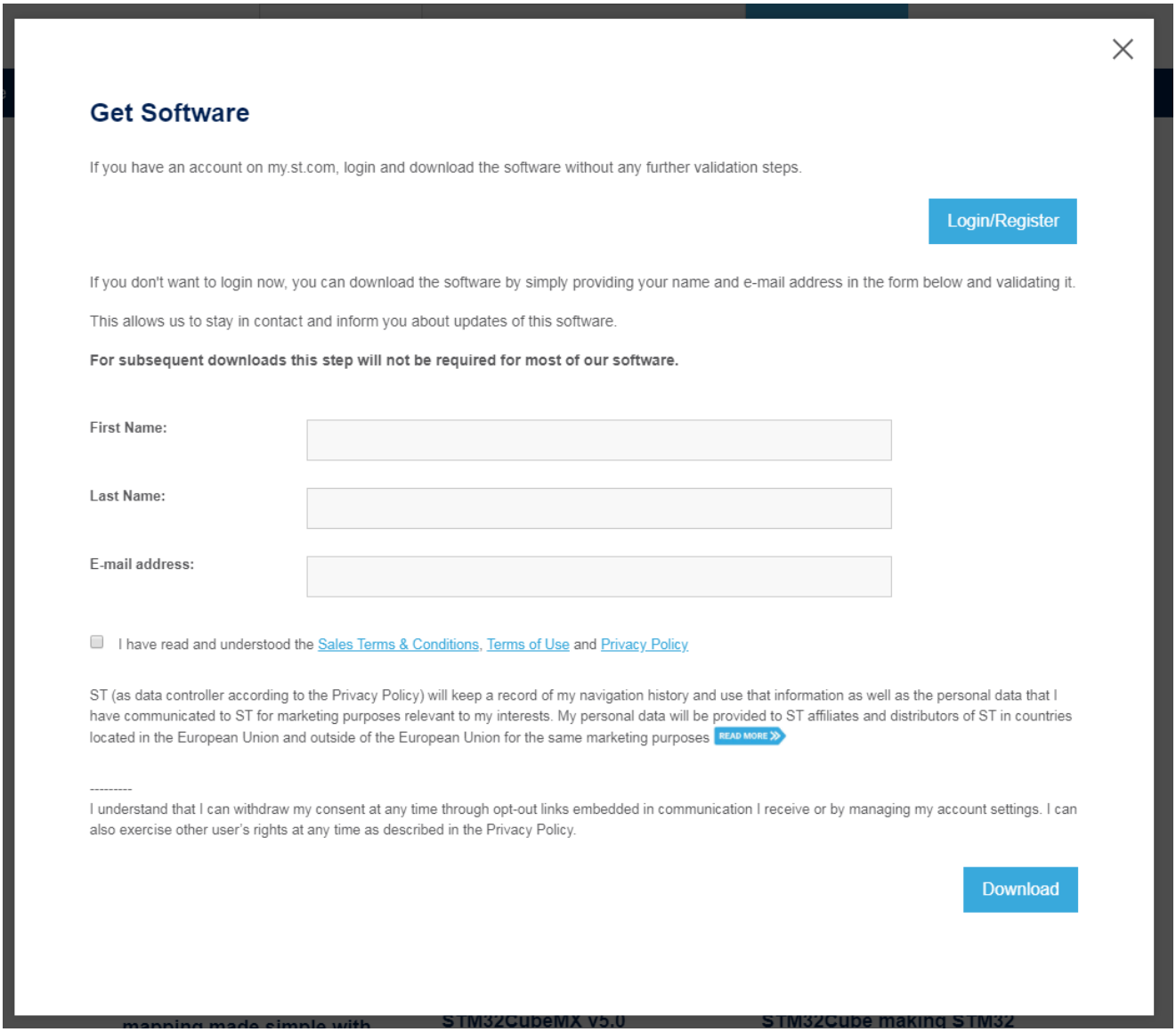


Click on:

When the following page appears:



Click on: ACCEPT

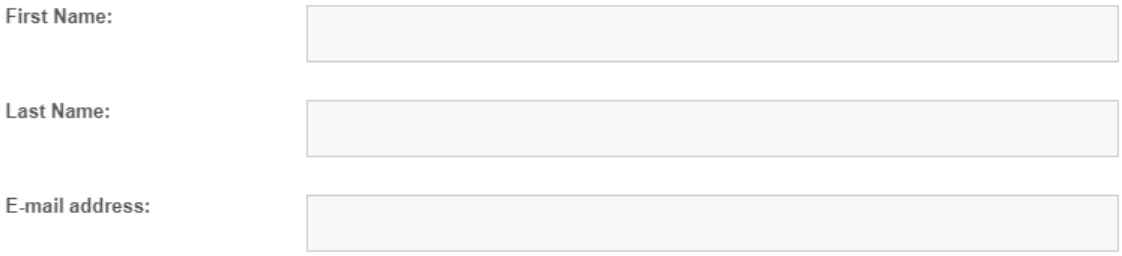


There are 3 ways of getting the software:

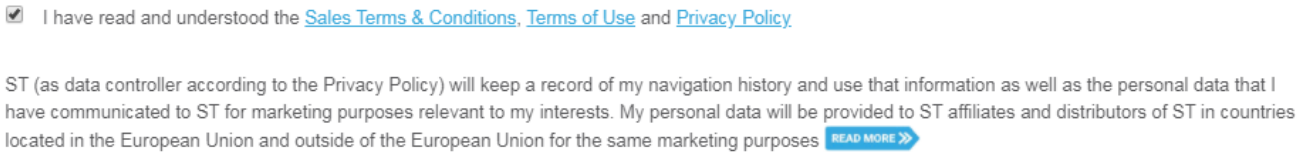
1. If you have an ST account click on:

2. If you don't have one, create one by clicking on:

3. If you don't have an account and don't want to create one, fill in the information below:



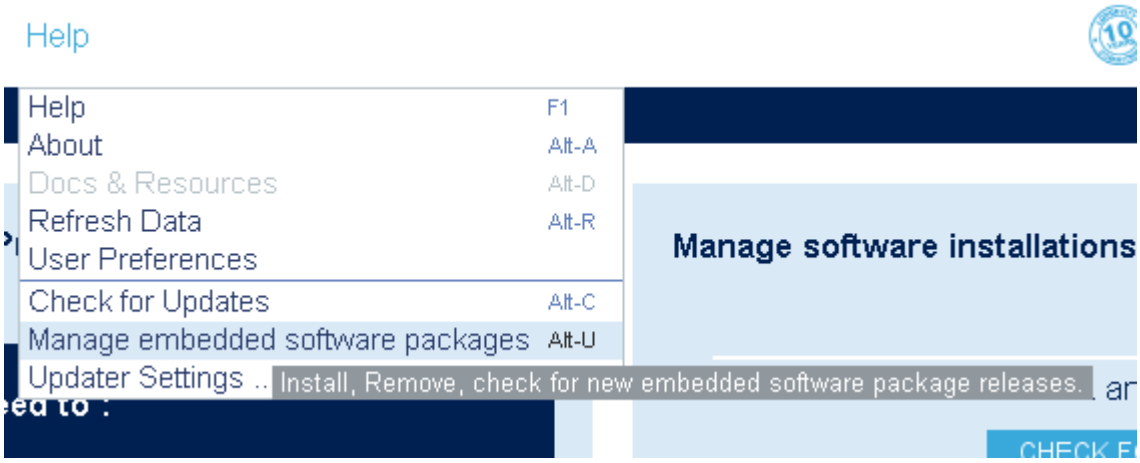
Click on the check box:



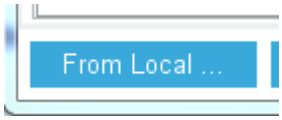
Then click:

Save the file en.stm32cubewb.zip at a location of your choice:

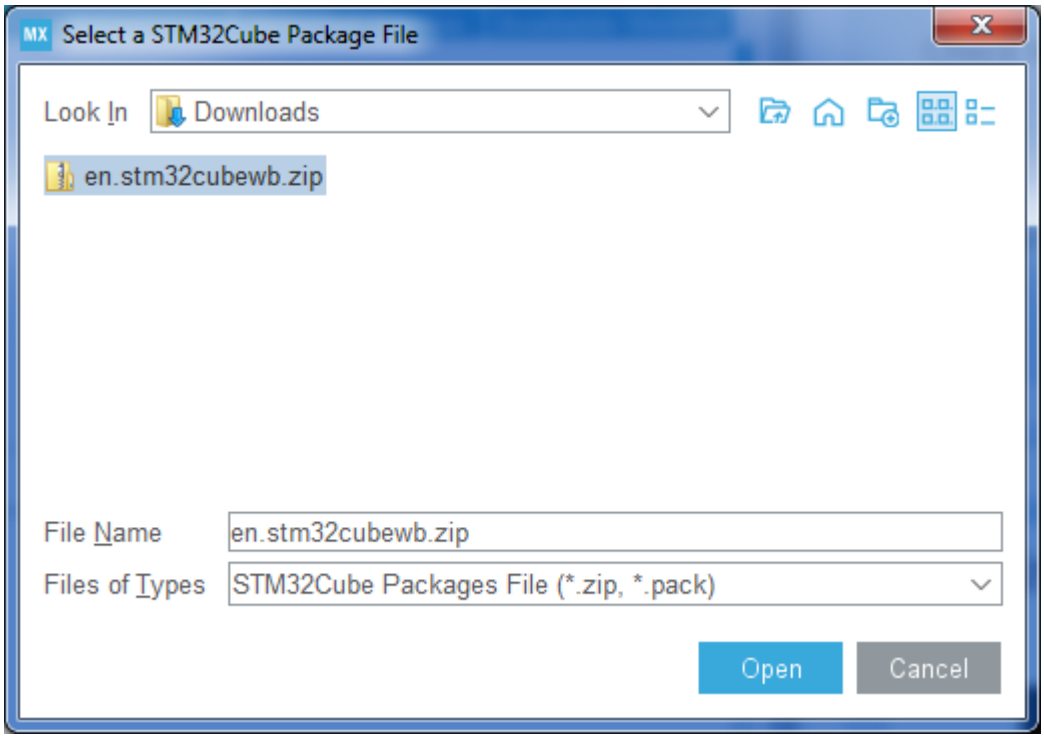
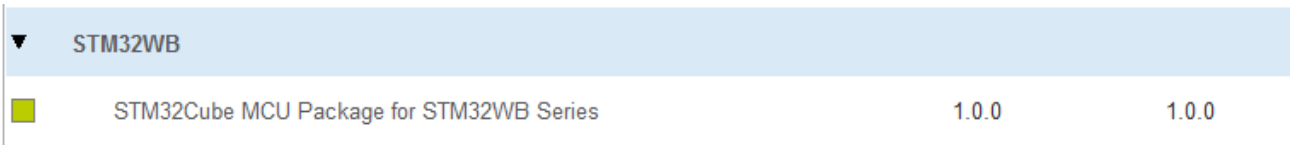
From STM32CubeMX : Help -> Manage embedded software packages



Click : From Local… :



Point to the en.stm32cubewb.zip file that you have downloaded:



This will install the Cube Library for the STM32WB at the correct location for you.
At the end when the install is complete you will see this: