

Installing Git on Mac OS Sonoma

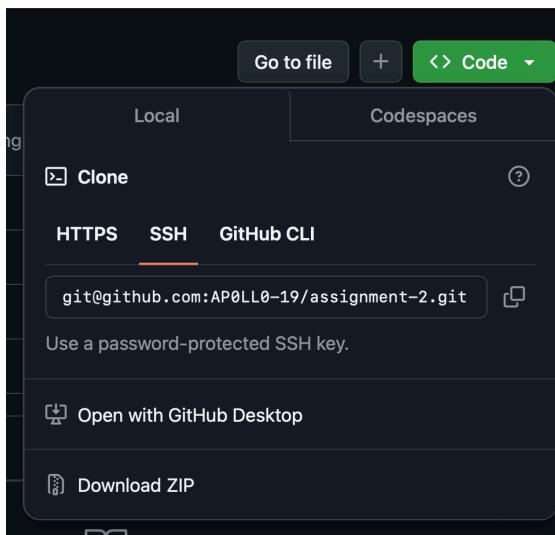
Before the tutorial make sure to have Xcode installed on your Mac. You can do this through the AppStore. Be warned! It takes a lot of space.

1. First we want to install home-brew to manage our packages we are going to be installing throughout the tutorial
 - Go to [this link](#) and download the file that says: Homebrew-4.4.2.pkg
 - Then follow the instructions on the installer
2. Now open a terminal window by pressing “command” + “space” and type “git –version” into your terminal and follow the prompts
3. Once you have git installed we want to configure your ssh key so that you can use it to get files from the UMSAE GitHub.

Setting up SSH

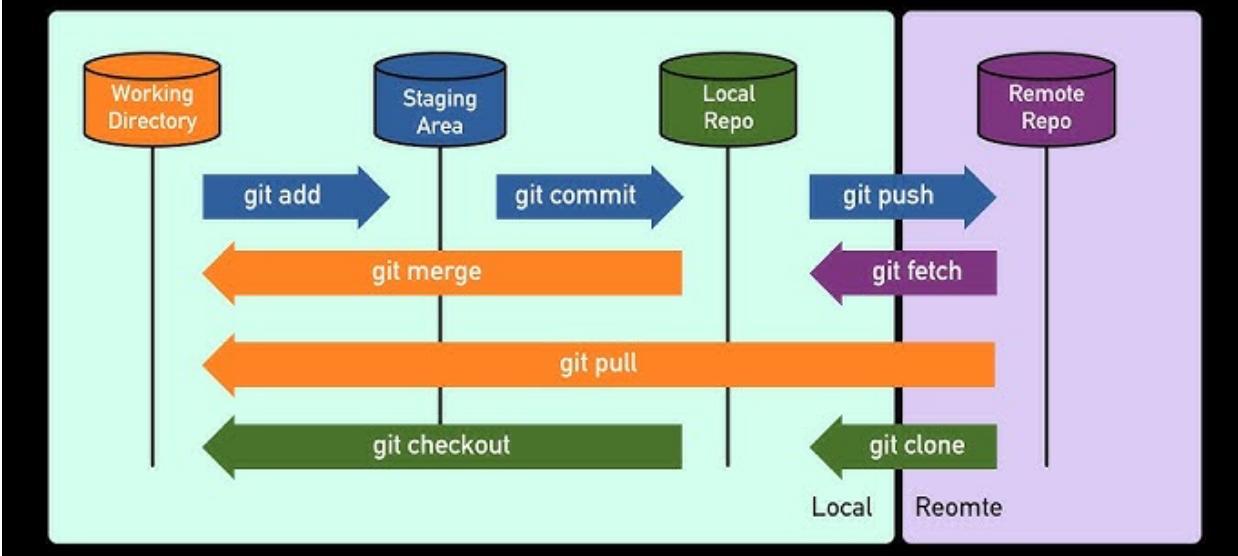
1. Open terminal and enter this: **ssh-keygen -t ed25519 -C "your_email@example.com"**
 - Make sure to use your GitHub email.
2. Press enter to use the default save path
3. Enter a password for your ssh Key.
4. Now we want to add the key to our ssh-agent, use: **exec ssh-agent zsh**

5. Now copy this command : **ssh-add --apple-use-keychain ~/.ssh/id_ed25519_github**
6. Now to copy the ssh key to your GitHub account
7. Use this command in the terminal: **pbcopy < ~/.ssh/id_ed25519_github.pub**
8. Now go to your GitHub account
 - Click on your avatar
 - Click SSH and GPG keys
 - Click new ssh key button
 - Enter a **title** for your key
 - Paste your key into the **key** field
 - Click add SSH key button
9. To test the key try cloning a GitHub repository using ssh
 - To do this use the command “git clone”, then use the copied path from GitHub (find this by clicking code, then ssh)



10. Done!!!! Her is a brief visual of the common commands

How Git Actually Works



Installing Putty on Mac

1. Alternatively if you have the ability to use a windows remote desktop and know how to set that up, then try that.
2. You must have Xcode installed!!!.
3. First we need to install macports to get putty working on Mac
4. Go [here](#) and install the package installer that matches your operating system. Then follow the instructions of the installer
5. Now we need to install XQuartz, start by going to [this link](#) downloading the quick install version and following the

installer instructions. When the installer asks for permissions, make sure to press ok. This software helps display windows software on Mac.

The screenshot shows the XQuartz project website. On the left is a vertical navigation bar with links: Home, Releases, Support, Contributing, Bug Reporting, and GitHub. The 'Releases' link is currently selected, indicated by a grey background. The main content area features the XQuartz logo at the top. Below it is a brief description of the project: "The XQuartz project is an open-source effort to develop a version of the X.Org X Window System that runs on macOS. Together with supporting libraries and applications, it forms the X11.app that Apple shipped with OS X versions 10.5 through 10.7." Underneath this is a "Quick Download" section. It contains a table with four columns: "Download" (with a link to "XQuartz-2.8.1.dmg"), "Version" (2.8.1), "Released" (2021-04-25), and "Info" (For macOS 10.9 or later). A red arrow points from the "License Info" heading below to the "XQuartz-2.8.1.dmg" download link. At the bottom of the page, there is a section titled "License Info" containing text about the various licenses included in the XQuartz distribution.

The XQuartz project is an open-source effort to develop a version of the [X.Org X Window System](#) that runs on macOS. Together with supporting libraries and applications, it forms the X11.app that Apple shipped with OS X versions 10.5 through 10.7.

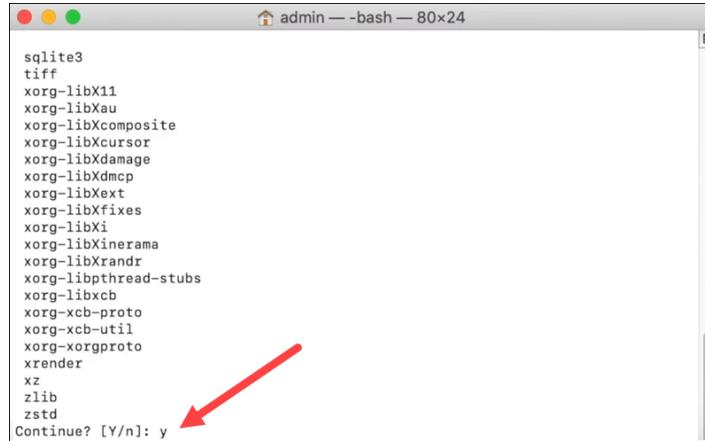
Quick Download

Download	Version	Released	Info
XQuartz-2.8.1.dmg	2.8.1	2021-04-25	For macOS 10.9 or later

License Info

An XQuartz installation consists of many individual pieces of software which have various licenses. The X.Org software components' licenses are discussed on the [X.Org Foundation Licenses page](#). The [quartz-wm](#) window manager included with the XQuartz distribution uses the [Apple Public Source License Version 2](#).

6. Now we can actually install Putty :)
 - Paste this command in terminal: **sudo port install putty** (this is using the brew package installer).
 - Confirm by pressing y. It could take a little while to complete, this is normal.

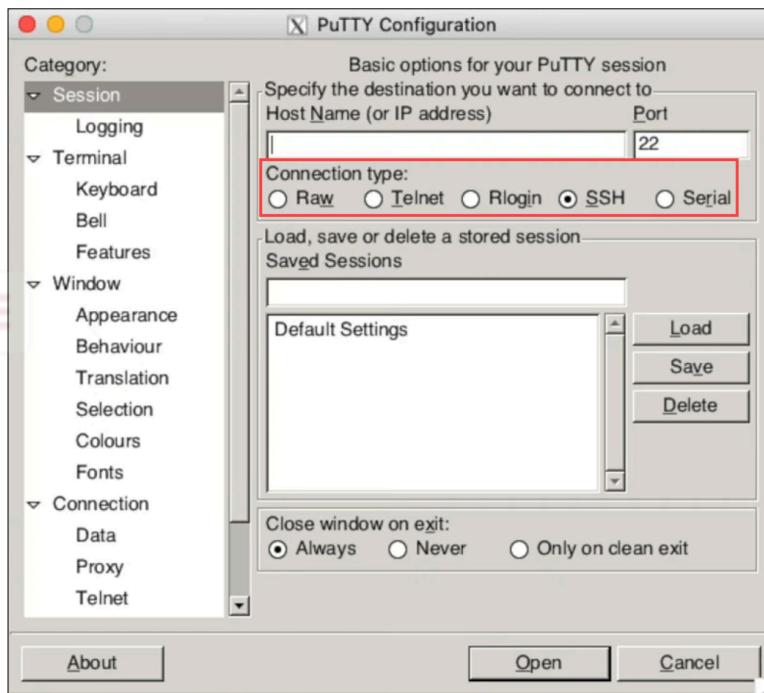


```
sqlite3
tiff
xorg-libX11
xorg-libXau
xorg-libXcomposite
xorg-libXcursor
xorg-libXdamage
xorg-libXdmcp
xorg-libXext
xorg-libXfixes
xorg-libXi
xorg-libXinerama
xorg-libXrandr
xorg-libpthread-stubs
xorg-libxcb
xorg-xcb-proto
xorg-xcb-util
xorg-xorgproto
xrender
xz
zlib
zstd
Continue? [Y/n]: y
```

- After it's done installing you can run putty by entering “putty” into your terminal

Putty Configuration

1. After running putty you should be met with this screen
2. For the purpose of future tutorials we care about the serial section



3. After plugging in your nucleo board run this command in the terminal: **ls /dev/tty.*** , if your board is plugged in you should get an option listed that looks like this: **/dev/tty.usbmodem14203** (I think yours will be slightly different)

```
kam@wifi-[REDACTED]:~ % ls /dev/tty.*  
/dev/tty.BLTH  
/dev/tty.Bluetooth-Incoming-Port  
/dev/tty.usbmodem14203
```

4. In putty it should by default have **/dev/ttyS0**, in the serial line. You want to replace S0 with .usbmodem14203 (you can't copy paste in this windows port). It should look like this:

```
/dev/tty.usbmodem14203
```

5. Tip you can save the session to avoid retyping the serial line.
6. Now you should be able to use putty for your tutorials, have fun !!

Cube MX and IDE documentation

Cube MX

1. Go to <https://www.st.com/en/development-tools/stm32cubemx.html>
2. Click get software

The screenshot shows the STM32CubeMX product page. At the top, there's a navigation bar with links for Careers, Sample & buy, Support & community, and language options (日本語, 中文, English). Below the navigation is a main menu with Products, Tools & software, Applications, Solutions, and ST Developer Zone. On the right side, there are links for About us, a shopping cart icon, and a user profile icon. The main content area features the STM32CubeMX logo and the text "STM32Cube initialization code generator". It includes two prominent buttons: "Get Software" and "Download databrief". Below these buttons is a navigation bar with tabs for Overview, Documentation, and Tools & Software. The "Overview" tab is currently active.

Product overview

Description All features Circuit Diagram Get Software Featured Videos Recommended for you

Feedback

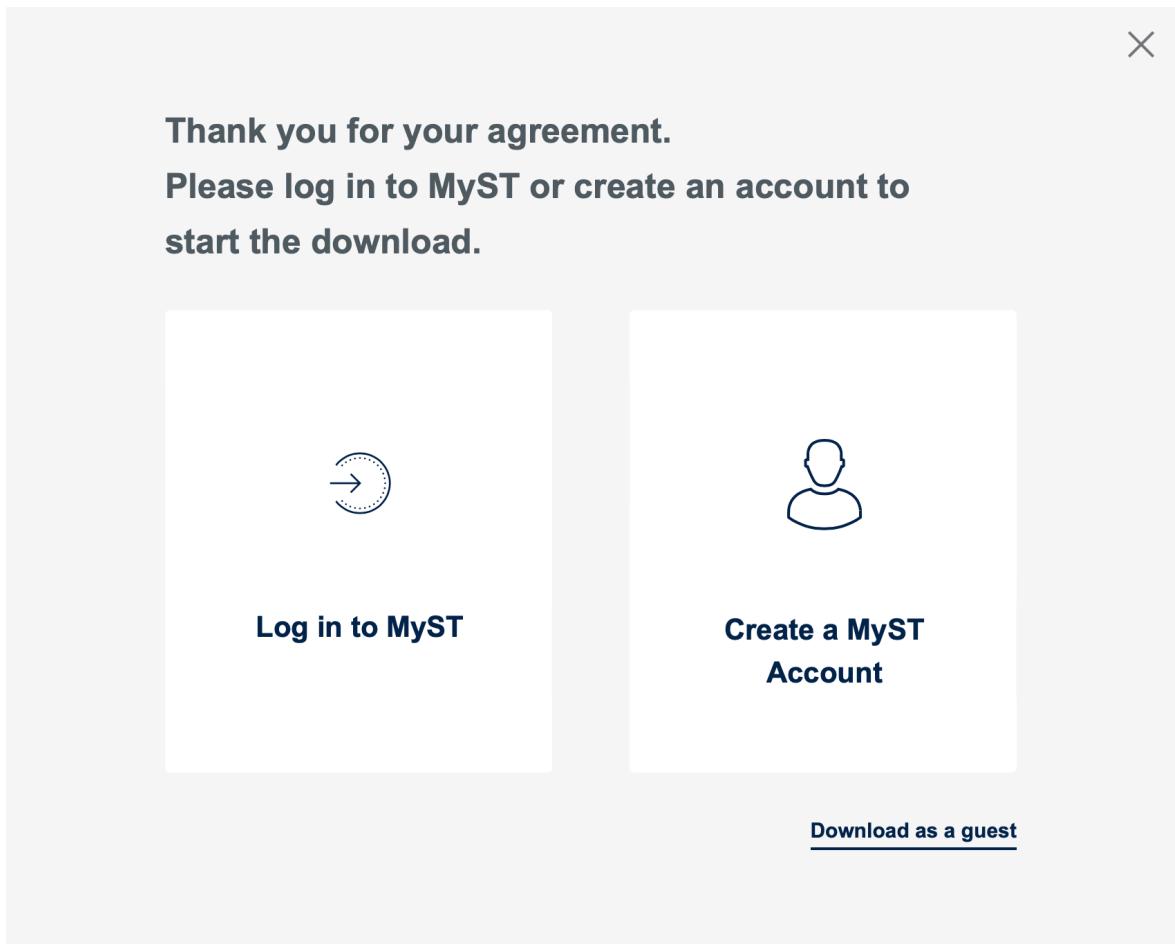
Description

STM32CubeMX is a graphical tool that allows a very easy configuration of STM32 microcontrollers and microprocessors, as well as the generation of the corresponding initialization C code for the Arm® Cortex®-M core or a partial Linux® Device Tree for Arm® Cortex®-A core, through a step-by-step

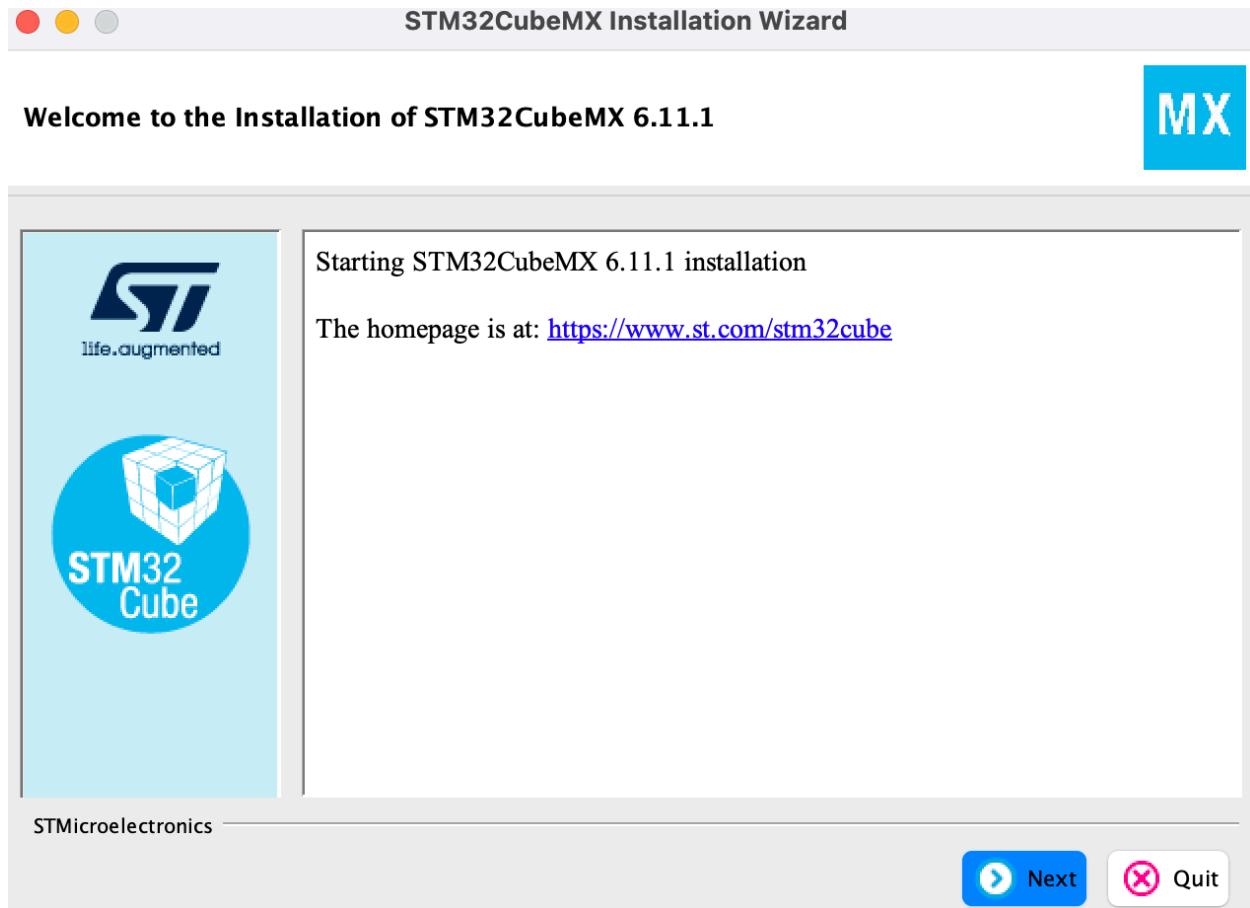
3. Click the select version and chose 6.11.1

The screenshot shows the "Get Software" section of the STM32CubeMX product page. It features a table with columns for Part Number, General Description, Supplier, Download, and All versions. There are three rows for different operating systems: Linux, macOS, and Windows. Each row has a "Get latest" button and a "Select version" dropdown menu. The Windows row's dropdown menu is open, showing options 6.12.1, 6.12.0, and 6.11.1, with 6.11.1 highlighted. To the right of the table, there's a "See All" link and a "Feedback" button. Below this, there's a "Featured Videos" section with three video thumbnails.

4. Click accept
5. Choose any option, Suggest making an account and saving your info



6. Open CubeMX downloader once downloaded. Click open when prompted after opening. Will look like:



7. Accept terms and conditions and click next.
8. You can chose custom download location if you want or leave default and click next.
9. Just wait for it to complete downloading. Then click next, then done.
10. You can now open CubeMX from under your applications.

CubeIDE

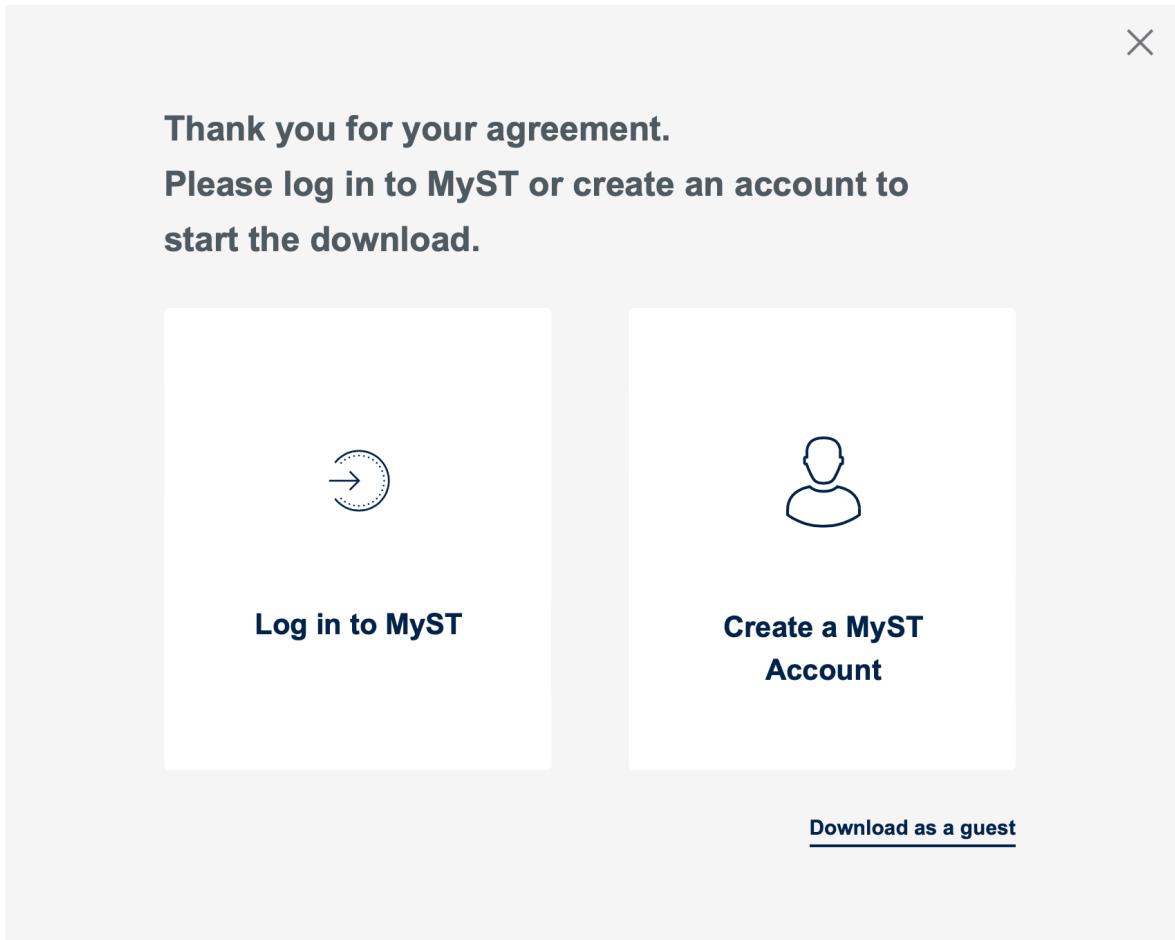
1. Go to <https://www.st.com/en/development-tools/stm32cubeide.html>
2. Click get software.

The screenshot shows the STM32CubeIDE product page. At the top, there's a navigation bar with links for Careers, Sample & buy, Support & community, and language options (日本語, 中文, English). Below the navigation is a main menu with categories like Products, Tools & software, Applications, Solutions, and ST Developer Zone. A search bar and user account icons are also present. The breadcrumb navigation shows the path: Development tools > Software development tools > STM32 Software Development Tools > STM32 IDEs > STM32CubeIDE. The main content area features the title "STM32CubeIDE ACTIVE" and "Integrated Development Environment for STM32". It includes two prominent buttons: "Get Software" and "Download databrief". Below these are tabs for Overview, Documentation, and Tools & Software. A "Save to myST" button is located in the top right corner. On the left side, there's a "Product overview" section with tabs for Description, All features, Get Software, Featured Videos, and Recommended for you. A yellow "Feedback" button is positioned on the right side of the page. A dark banner at the bottom of the main content area contains the text "Looking to embed AI in your project? Discover free tools, case studies, and resources to fast-track your development." and a "Go to the ST Edge AI Suite" button.

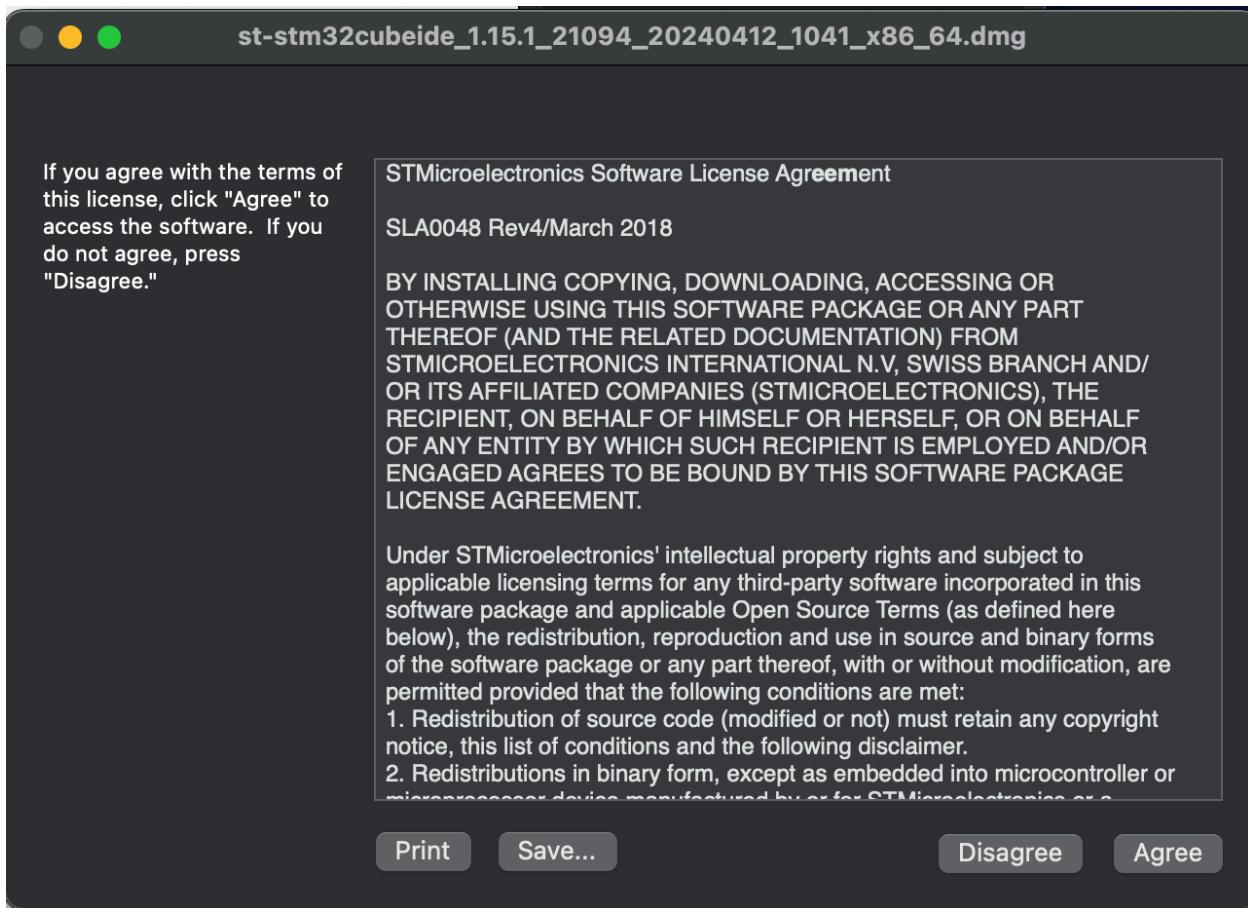
3. Click Mac 1.15.1

This screenshot shows the "Get Software" section of the STM32CubeIDE page. It displays a table of software installers with columns for Part Number, General Description, Latest version, Download, and All versions. The table includes rows for STM32CubeIDE-DEB, STM32CubeIDE-Lnx, STM32CubeIDE-Mac, STM32CubeIDE-RPM, and STM32CubeIDE-Win. For each row, there is a "Get latest" button and a dropdown menu for selecting different versions. The "STM32CubeIDE-Mac" row has a dropdown menu open, showing options for 1.16.1, 1.16.0, and 1.15.1. A yellow "Feedback" button is located on the right side of the page. A dark banner at the bottom contains the text "Looking to embed AI in your project? Discover free tools, case studies, and resources to fast-track your development." and a "Go to the ST Edge AI Suite" button.

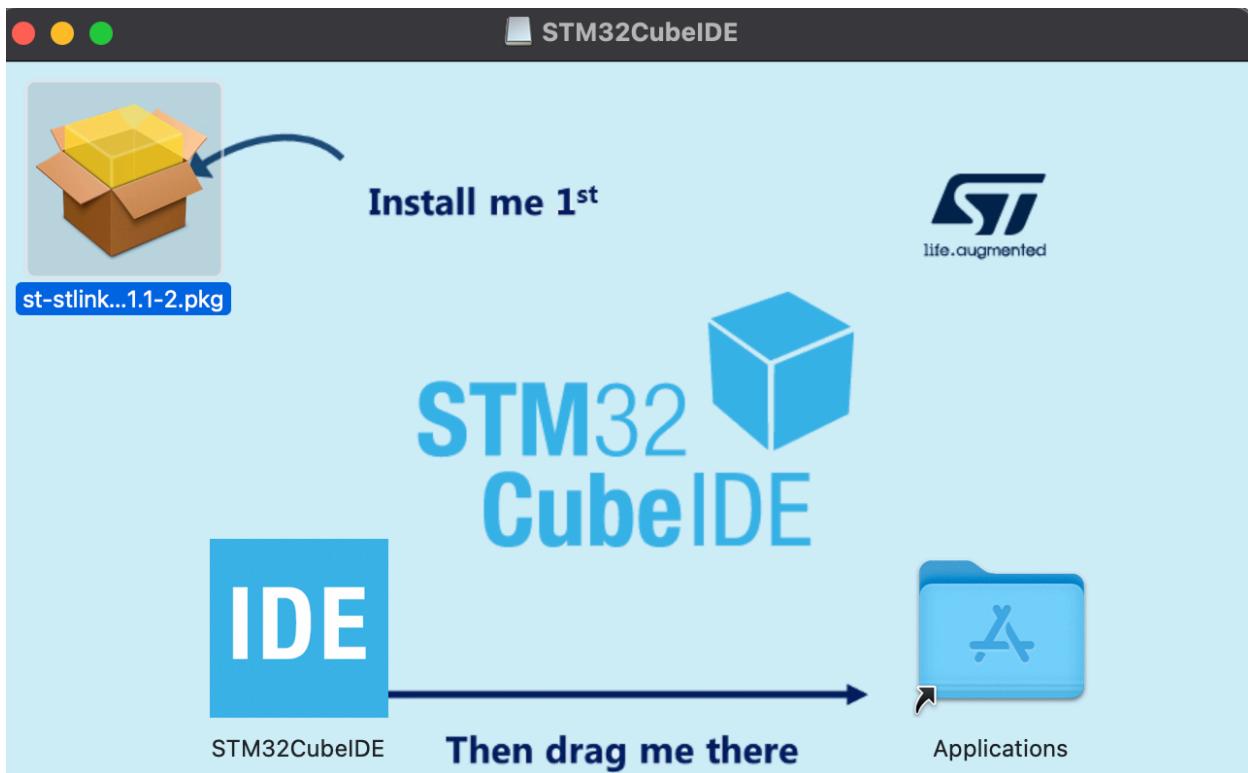
4. Hit accept.
5. Choose any option, Suggest making an account and saving your info.



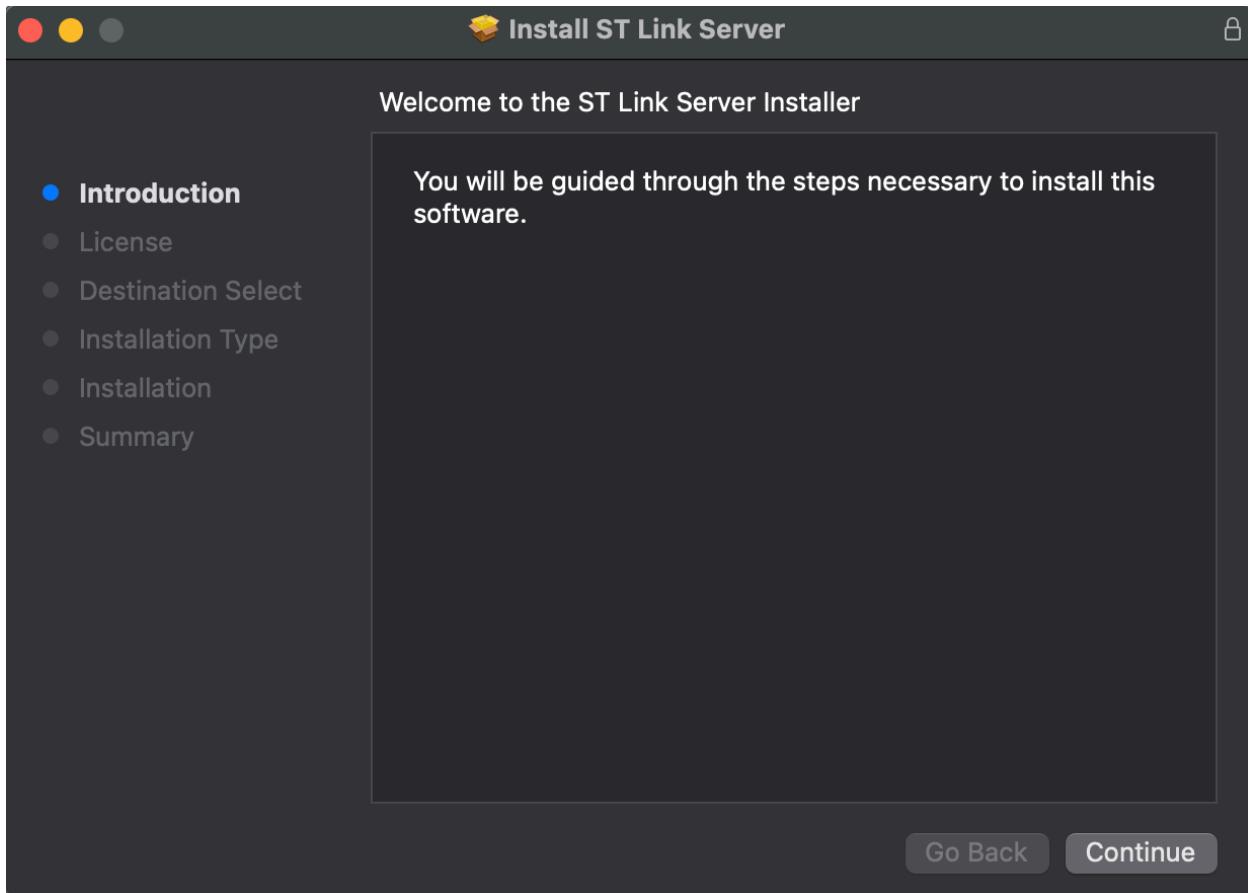
6. Open CubeIDE downloader once downloaded. Click open when prompted after opening. Will look like:



7. Click agree. And this should open up:

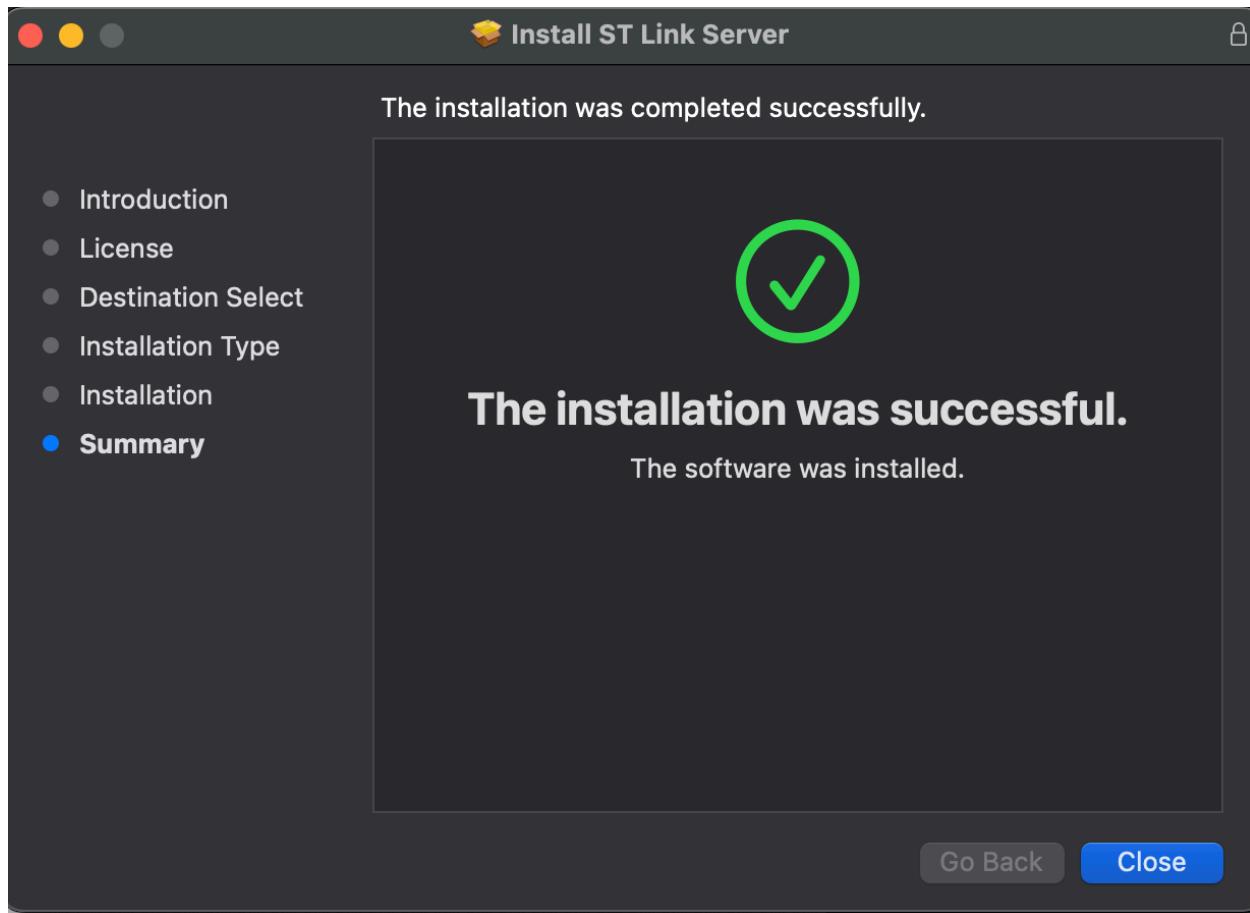


8. Double click the box with orange cube. This should open up:



9. Click continue and agree, and input your Mac password if required and hit install.

10. Once you see the screen below hit close, and go back to the screen on step 7.



11. Drag and drop the cubelDE icon to applications icon.
12. Just wait for it to complete downloading.
13. You can now open CubelDE from under your applications.