Title: Preparing a development environment for the ESPLC

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Step 1: Install the necessary tools to work with the code.

- Install VSCode and the PlatformIO IDE by following the steps listed here: https://platformio.org/platformio-ide
- Install TortoiseGit (or similar Git tool) - https://tortoisegit.org/
    - I prefer TortoiseGit, so this tutorial will focus on it. If you have a different tool you like to use, then I'll assume that you're already familiar with it.

Step 2: Once PlatformIO is installed and loaded, install the "Espressif 32" framework by navigating to "Platforms" and searching under the "Embedded" category. Once you find "Espressif 32", click on it, and then click the install button.

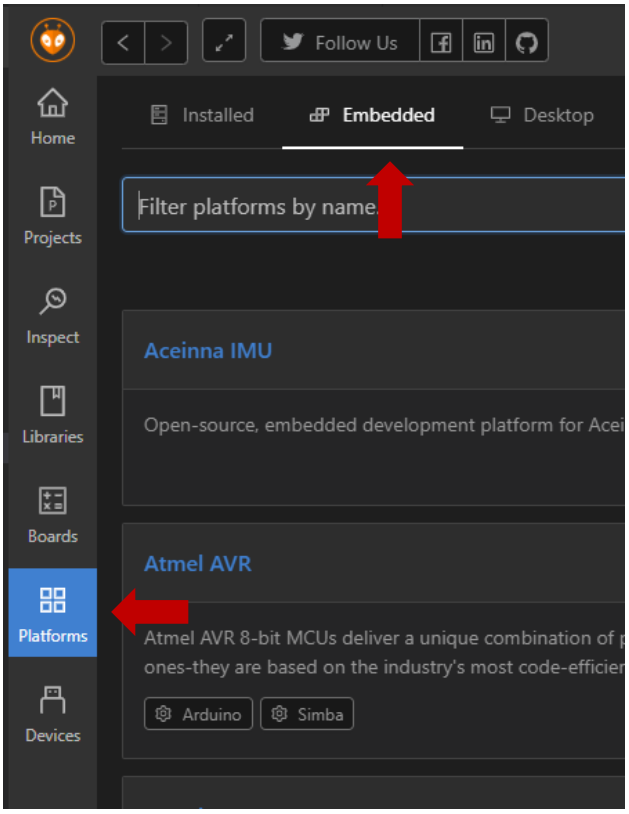


Figure 1

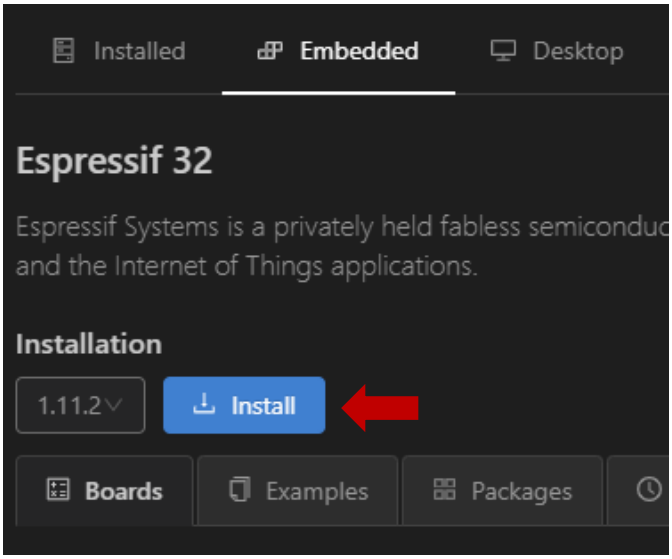


Figure 2

Step 3: Download the ESPLC source code (precompiled binaries may be added at a later date to make deployment easier).

- Create a new folder to house the source files, this can be anywhere you'd like. Name it something appropriate, like "ESPLC-DEV". Right-click on the folder, and if TortoiseGit was installed properly, you should see a shell menu field that looks like the one shown below.
    - Click "Git Clone".

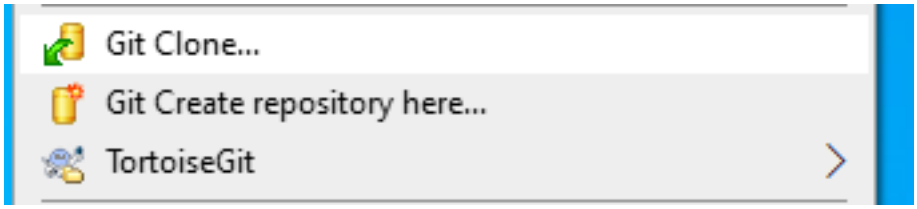


Figure 3

- Following that, a new screen should appear that looks like the one below:

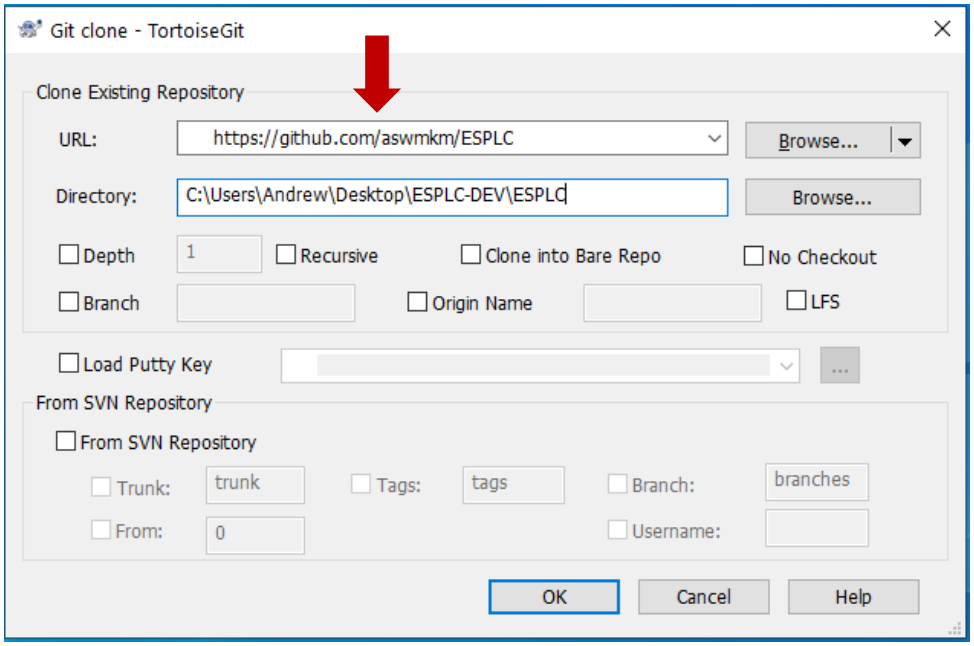


Figure 4

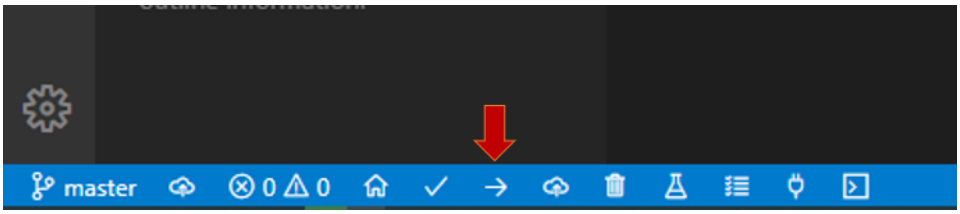
- Ensure that the URL is set to https://github.com/aswmkm/ESPLC, then hit "Ok".
    - Once the operation completes, you should have a local copy of the project files on your computer.

Step 4: Open the project in PlatformIO.

- Navigate to the PlatformIO home page (shown below), and click the “Open Project” button.
    - Navigate to the folder containing the files obtained from the Git repository (should contain the “platformio.ini” file) and hit “Open”.

Step 5: Uploading to the ESP-32 board.

- Congratulations, you’ve successfully opened the project files and the IDE is set up. At this point, all that is required to deploy the project onto the board is to connect the ESP-32 via USB and click the upload button (shown in the figure below), which is located in the bottom left-hand side of the screen.
    - Once the device is plugged in, the IDE should automatically detect it and set the upload ports accordingly. If it does not, ensure that the device is listed under the “Devices” section (Shown below the “Platforms” button in Figure 1 on page 1 of this document).
        - If it isn’t listed, try connecting it to a different USB port.
        - Failing that, try a different development board.



**Note that some development boards require you to hold down the “Boot” button on the board while flashing the new firmware. If this button is not held depressed until the IDE can successfully connect to it, the flashing process will fail.