

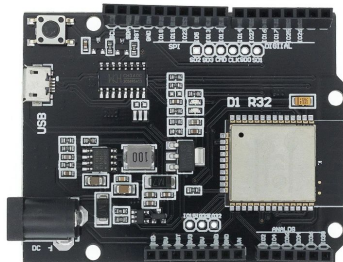
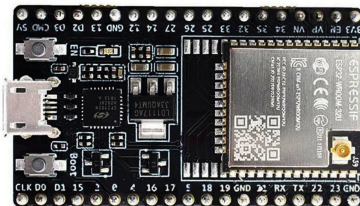
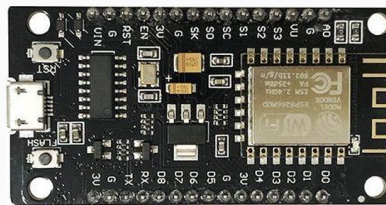
Professor: Luiz Felipe Oliveira

# ESP32 + Arduino IDE

## IDE



## HARDWARE



## DRIVER

CH340

CP2102

...

# Opção 1: Instalando o Arduino IDE


**Arduino Web Editor**

Start coding online and save your sketches in the cloud. The most up-to-date version of the IDE includes all libraries and also supports new Arduino boards.

[CODE ONLINE](#) [GETTING STARTED](#)



## Downloads

 **Arduino IDE 1.8.15**

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. This software can be used with any Arduino board.

Refer to the [Getting Started](#) page for Installation instructions.

SOURCE CODE

Active development of the Arduino software is [hosted by GitHub](#). See the instructions for [building the code](#). Latest release source code archives are available [here](#). The archives are PGP-signed so they can be verified using [this](#) gpg key.

**DOWNLOAD OPTIONS**


- Windows** Win 7 and newer
- Windows** ZIP file
- Windows app** Win 8.1 or 10 [Get](#)
- Linux** 32 bits
- Linux** 64 bits
- Linux** ARM 32 bits
- Linux** ARM 64 bits
- Mac OS X** 10.10 or newer

[Release Notes](#) [Checksums \(sha512\)](#)

<https://www.arduino.cc/en/software>

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## Arduino IDE

Arduíno LLC • Ferramentas de desenvolvedor

Arduíno is an open-source electronics platform based on easy-to-use hardware and software. It's intended for anyone making interactive projects.

Mais

**L** LIVRE

**Gratuito**

**Obter**

Consulte Requisitos do Sistema

[Visão geral](#) [Requisitos do sistema](#) [Relacionado](#)

### Disponível em


computador

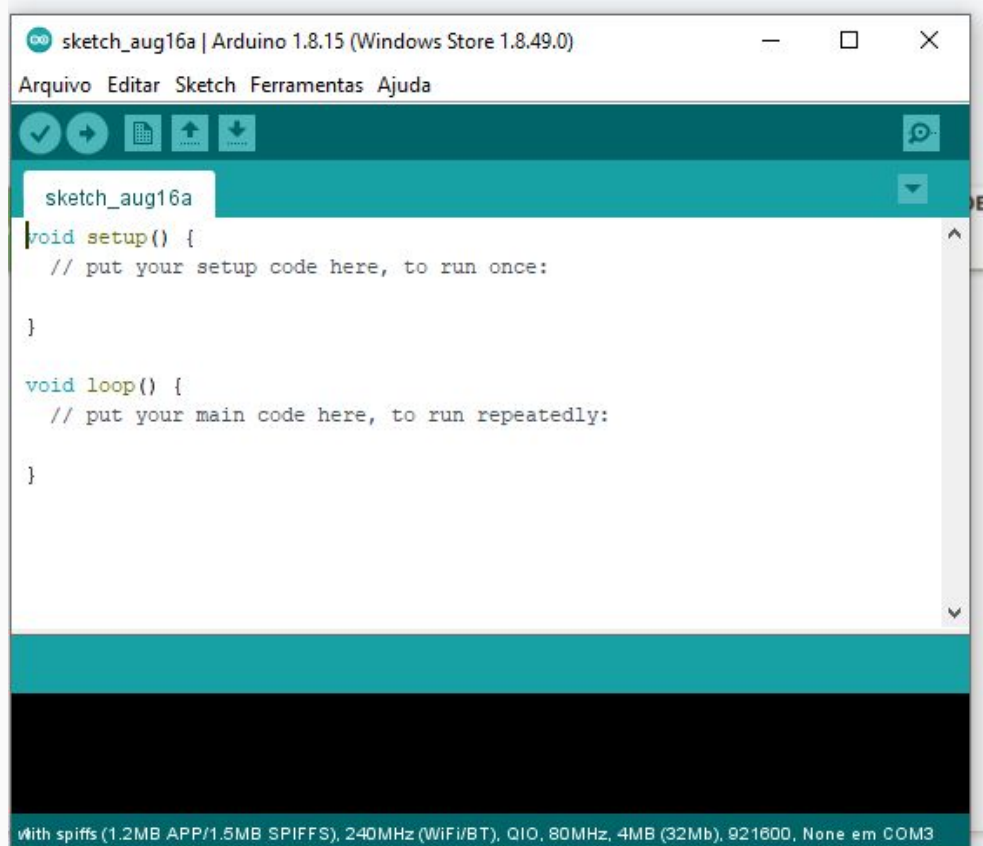
### Descrição

Arduíno is an open-source electronics platform based on easy-to-use hardware and software. It's intended for anyone making interactive projects.

IMPORTANT: This app performs with core functionality on Windows 10 S but some limited plugins do not work. We are working with Microsoft on a fix.

### Capturas de tela





The screenshot shows the Arduino IDE interface. The window title is "sketch\_aug16a | Arduino 1.8.15 (Windows Store 1.8.49.0)". The menu bar includes "Arquivo", "Editar", "Sketch", "Ferramentas", and "Ajuda". The toolbar contains icons for a checkmark, a right arrow, a grid, an upload arrow, a download arrow, and a search icon. The sketch editor shows the following code:

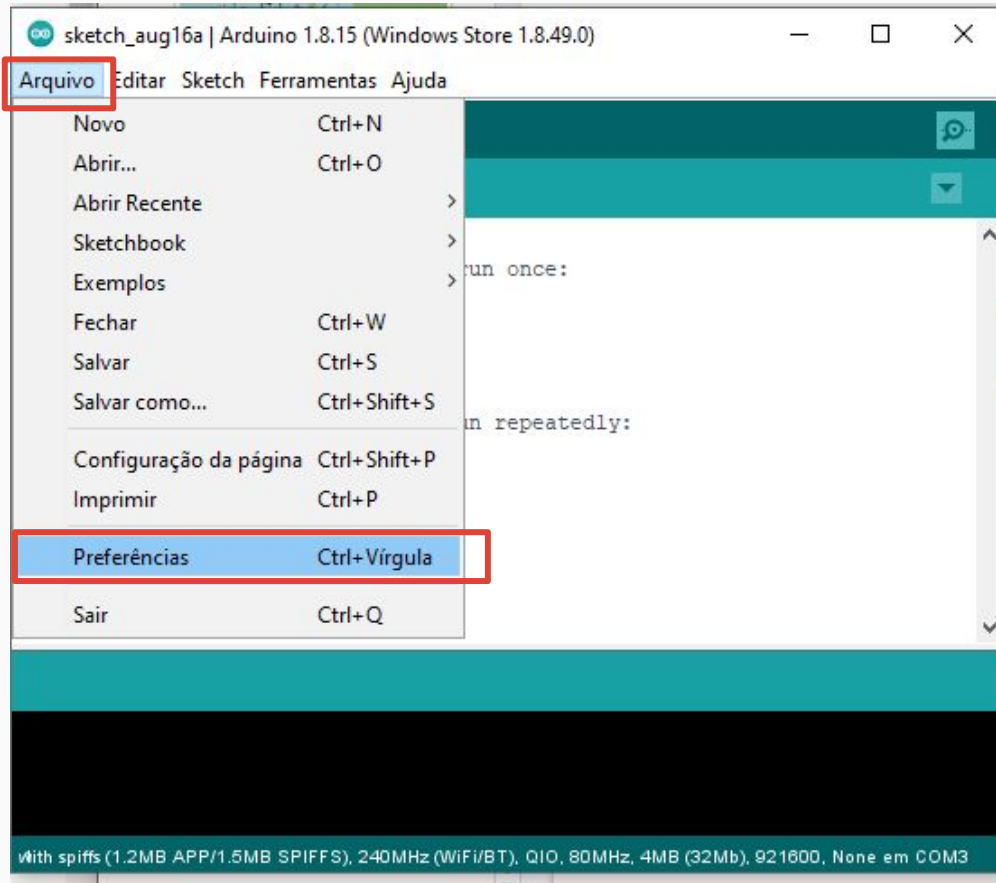
```
sketch_aug16a
void setup() {
  // put your setup code here, to run once:

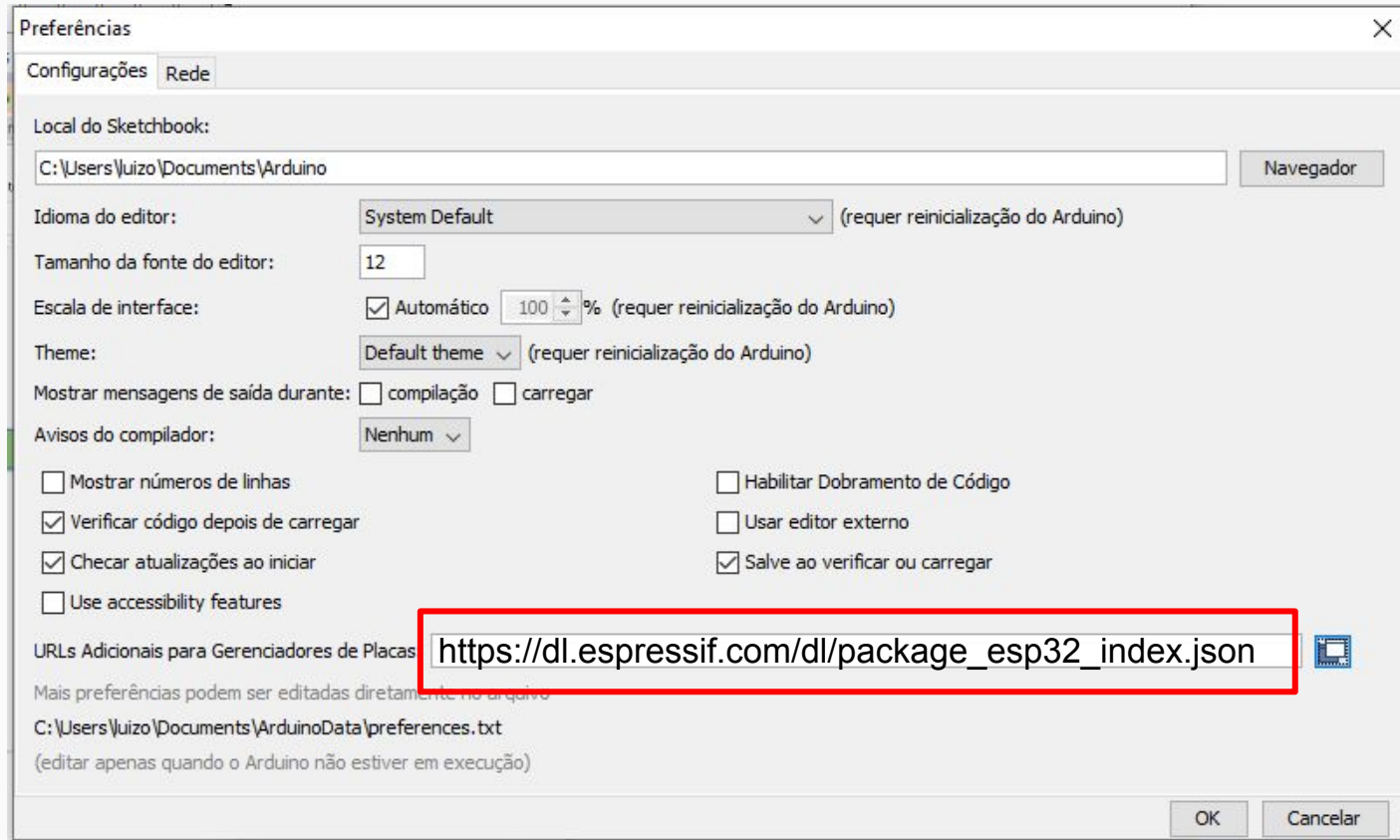
}

void loop() {
  // put your main code here, to run repeatedly:

}
```

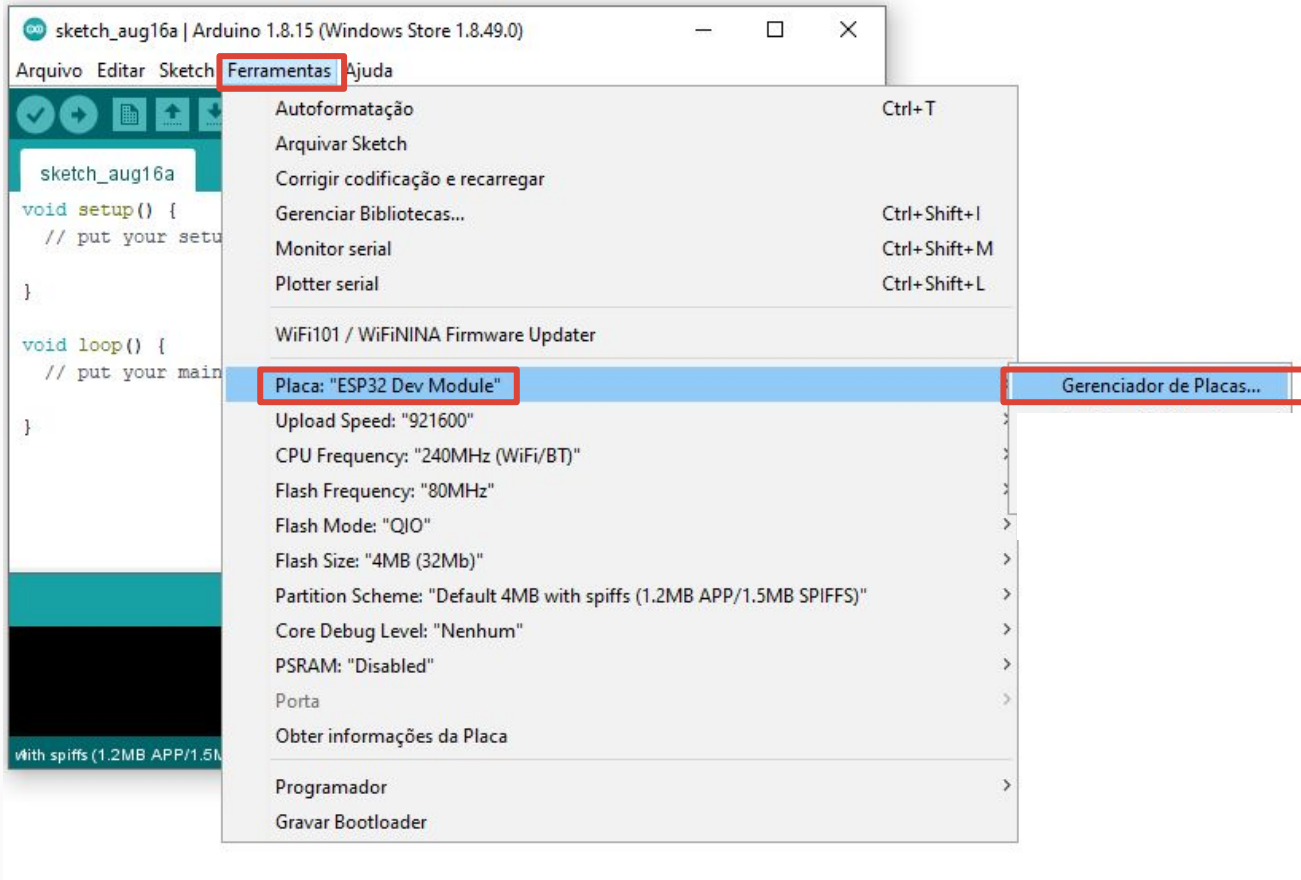
At the bottom of the IDE, there is a status bar with the text: "With spiiffs (1.2MB APP/1.5MB SPIFFS), 240MHz (WiFi/BT), QIO, 80MHz, 4MB (32Mb), 921600, None em COM3".





[https://dl.espressif.com/dl/package\\_esp32\\_index.json](https://dl.espressif.com/dl/package_esp32_index.json)

# Adicionando suporte ao ESP32



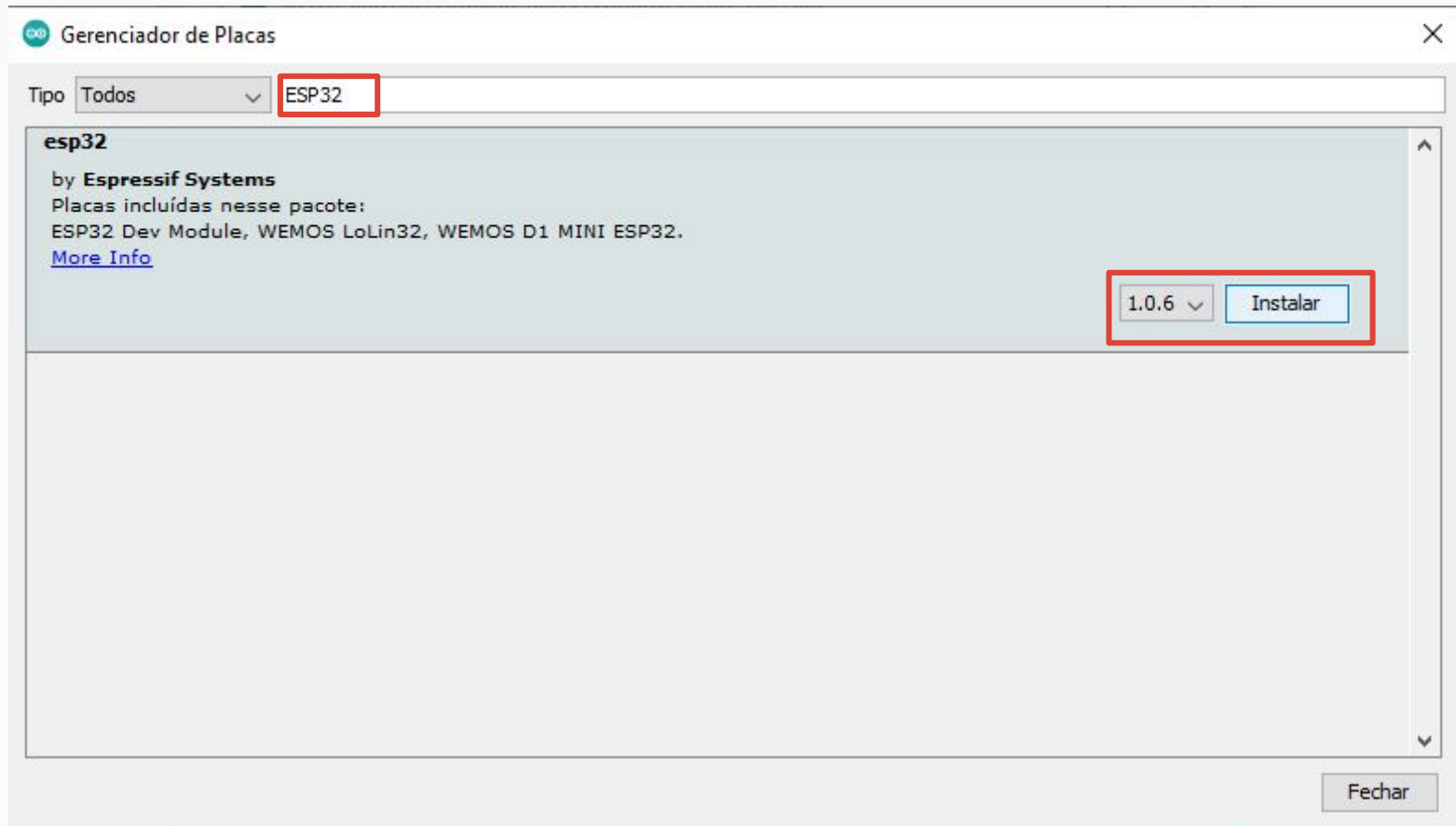
The image shows the Arduino IDE interface with the 'Ferramentas' menu open. The menu items are:

- Autoformatação (Ctrl+T)
- Arquivar Sketch
- Corrigir codificação e recarregar
- Gerenciar Bibliotecas... (Ctrl+Shift+I)
- Monitor serial (Ctrl+Shift+M)
- Plotter serial (Ctrl+Shift+L)
- WiFi101 / WiFININA Firmware Updater
- Placa: "ESP32 Dev Module"** (highlighted)
- Upload Speed: "921600"
- CPU Frequency: "240MHz (WiFi/BT)"
- Flash Frequency: "80MHz"
- Flash Mode: "QIO"
- Flash Size: "4MB (32Mb)"
- Partition Scheme: "Default 4MB with spiffs (1.2MB APP/1.5MB SPIFFS)"
- Core Debug Level: "Nenhum"
- PSRAM: "Disabled"
- Porta
- Obter informações da Placa
- Programador
- Gravar Bootloader

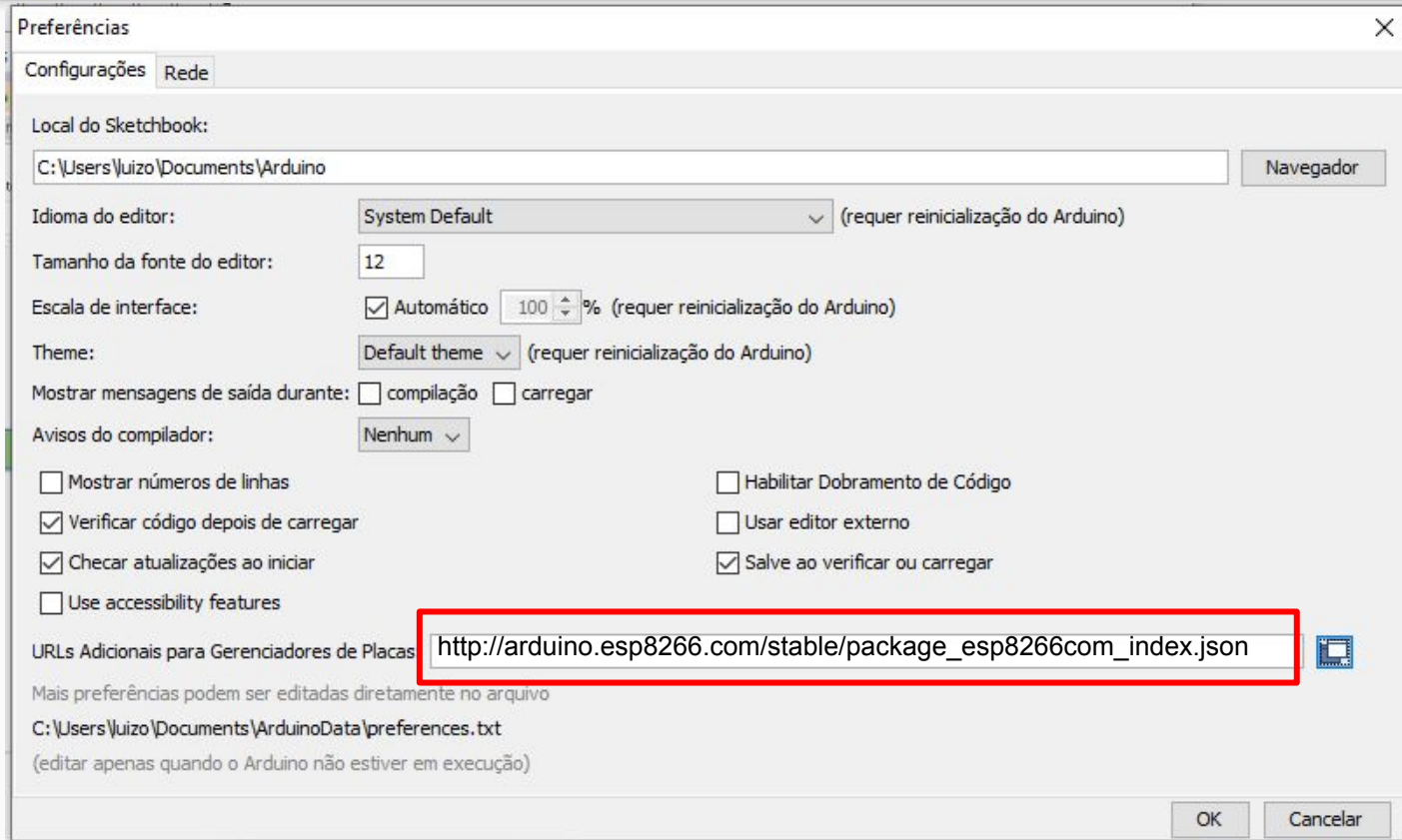
The 'Gerenciador de Placas...' dialog box is open, showing a list of boards. The 'ESP32 Dev Module' is selected in the list.



# Adicionando suporte ao ESP32

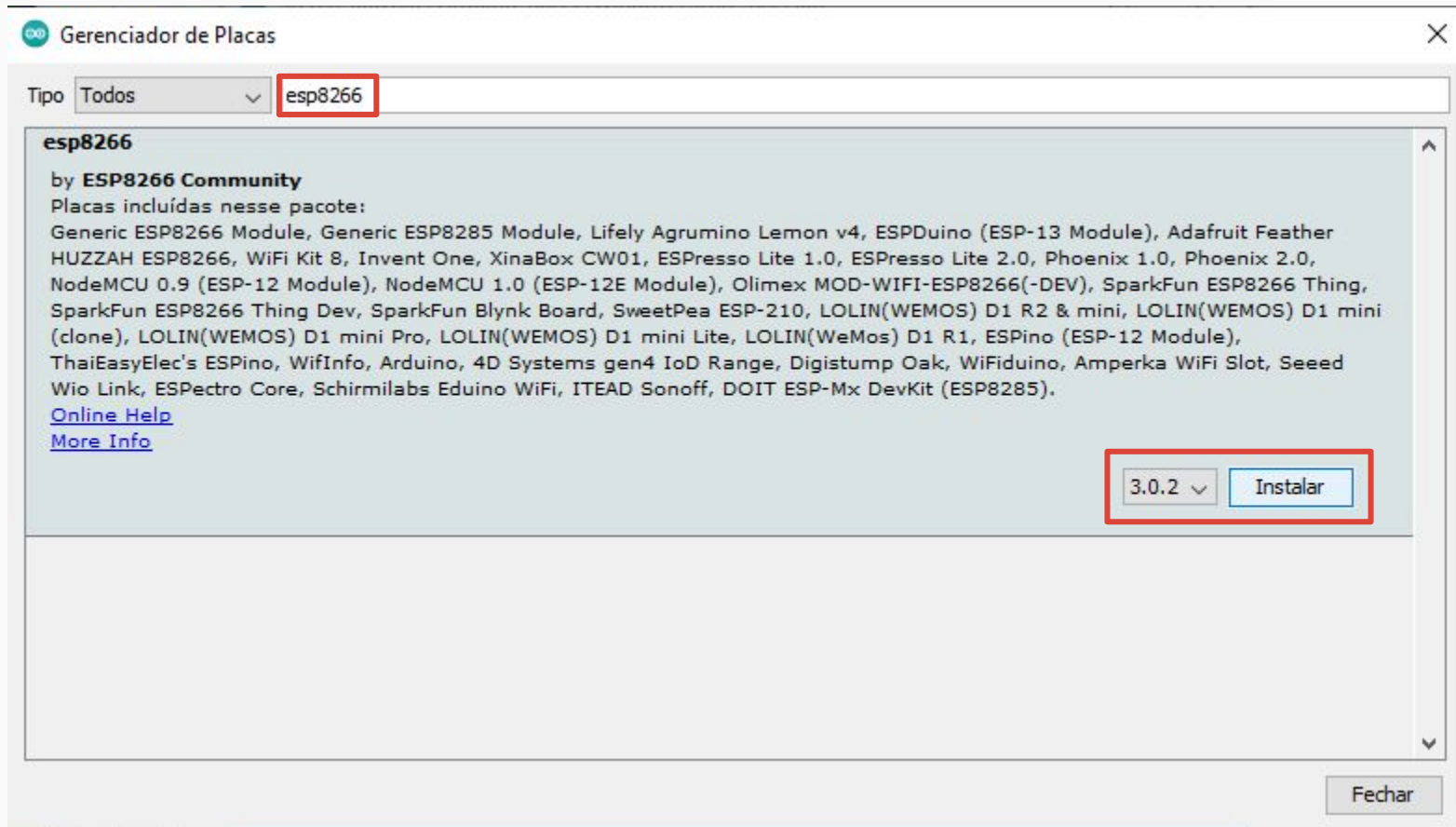


# Opcional: Adicionando suporte ao ESP8266



[http://arduino.esp8266.com/stable/package\\_esp8266com\\_index.json](http://arduino.esp8266.com/stable/package_esp8266com_index.json)

# Opcional: Adicionando suporte ao ESP8266



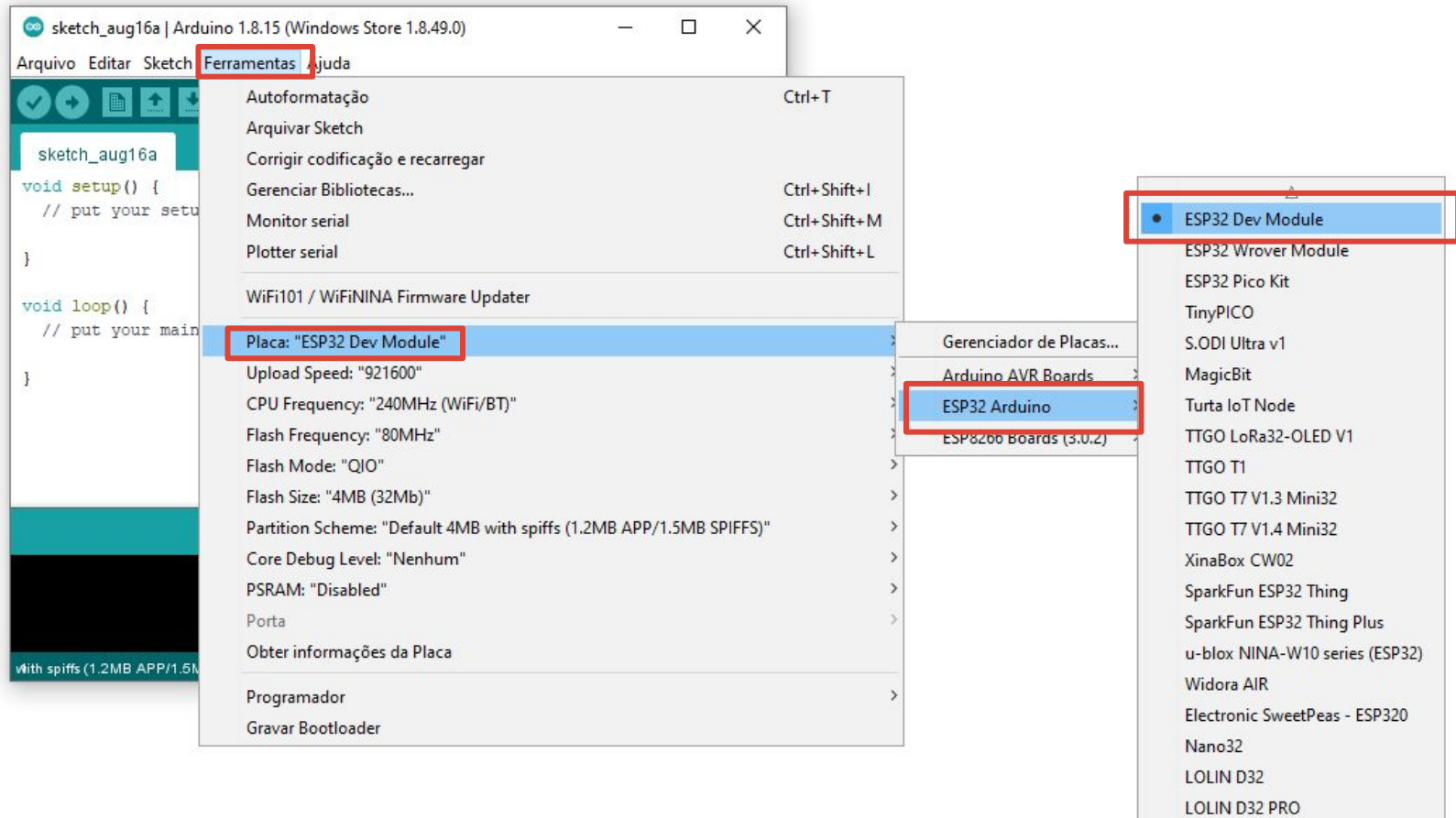
Gerenciador de Placas

Tipo Todos

**esp8266**  
by **ESP8266 Community**  
Placas incluídas nesse pacote:  
Generic ESP8266 Module, Generic ESP8285 Module, Lively Agrumino Lemon v4, ESPduino (ESP-13 Module), Adafruit Feather HUZZAH ESP8266, WiFi Kit 8, Invent One, XinaBox CW01, ESPresso Lite 1.0, ESPresso Lite 2.0, Phoenix 1.0, Phoenix 2.0, NodeMCU 0.9 (ESP-12 Module), NodeMCU 1.0 (ESP-12E Module), Olimex MOD-WIFI-ESP8266(-DEV), SparkFun ESP8266 Thing, SparkFun ESP8266 Thing Dev, SparkFun Blynk Board, SweetPea ESP-210, LOLIN(WEMOS) D1 R2 & mini, LOLIN(WEMOS) D1 mini (clone), LOLIN(WEMOS) D1 mini Pro, LOLIN(WEMOS) D1 mini Lite, LOLIN(WeMos) D1 R1, ESPino (ESP-12 Module), ThaiEasyElec's ESPino, WifInfo, Arduino, 4D Systems gen4 IoD Range, Digistump Oak, WiFiduino, Amperka WiFi Slot, Seeed Wio Link, ESPectro Core, Schirmilabs Eduino WiFi, ITEAD Sonoff, DOIT ESP-Mx DevKit (ESP8285).  
[Online Help](#)  
[More Info](#)

3.0.2

# Adicionando suporte ao ESP32



The screenshot shows the Arduino IDE interface with the 'Ferramentas' (Tools) menu open. The 'Placa: "ESP32 Dev Module"' option is highlighted in blue. A secondary menu is open for 'Gerenciador de Placas...', showing 'ESP32 Arduino' selected. The 'Gerenciador de Placas...' menu lists various boards, including 'ESP32 Dev Module', 'ESP32 Wrover Module', 'ESP32 Pico Kit', 'TinyPICO', 'S.ODI Ultra v1', 'MagicBit', 'Turta IoT Node', 'TTGO LoRa32-OLED V1', 'TTGO T1', 'TTGO T7 V1.3 Mini32', 'TTGO T7 V1.4 Mini32', 'XinaBox CW02', 'SparkFun ESP32 Thing', 'SparkFun ESP32 Thing Plus', 'u-blox NINA-W10 series (ESP32)', 'Widora AIR', 'Electronic SweetPeas - ESP320', 'Nano32', 'LOLIN D32', and 'LOLIN D32 PRO'.

sketch\_aug16a | Arduino 1.8.15 (Windows Store 1.8.49.0)

Arquivo Editar Sketch Ferramentas Ajuda

Autoformatação Ctrl+T

Arquivar Sketch

Corrigir codificação e recarregar

Gerenciar Bibliotecas... Ctrl+Shift+I

Monitor serial Ctrl+Shift+M

Plotter serial Ctrl+Shift+L

WiFi101 / WiFININA Firmware Updater

Placa: "ESP32 Dev Module"

Upload Speed: "921600"

CPU Frequency: "240MHz (WiFi/BT)"

Flash Frequency: "80MHz"

Flash Mode: "QIO"

Flash Size: "4MB (32Mb)"

Partition Scheme: "Default 4MB with spiffs (1.2MB APP/1.5MB SPIFFS)"

Core Debug Level: "Nenhum"

PSRAM: "Disabled"

Porta

Obter informações da Placa

Programador

Gravar Bootloader

Gerenciador de Placas...

ESP32 Dev Module

ESP32 Wrover Module

ESP32 Pico Kit

TinyPICO

S.ODI Ultra v1

MagicBit

Turta IoT Node

TTGO LoRa32-OLED V1

TTGO T1

TTGO T7 V1.3 Mini32

TTGO T7 V1.4 Mini32

XinaBox CW02

SparkFun ESP32 Thing

SparkFun ESP32 Thing Plus

u-blox NINA-W10 series (ESP32)

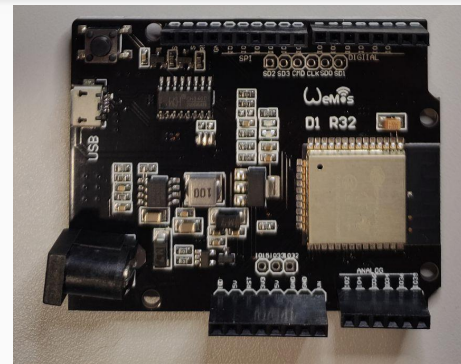
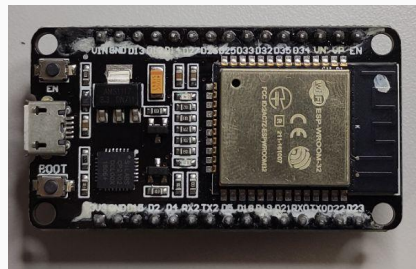
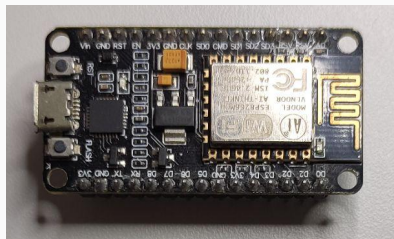
Widora AIR

Electronic SweetPeas - ESP320

Nano32

LOLIN D32

LOLIN D32 PRO



CP2102

CP2102

CH340

## Download and Install VCP Drivers

Downloads for Windows, Macintosh, Linux and Android below.

\*Note: The Linux 3.x.x and 4.x.x version of the driver is maintained in the current Linux 3.x.x and 4.x.x tree at [www.kernel.org](http://www.kernel.org).

## Software Downloads

Software (10)

Software • 10

<a href="#">CP210x Universal Windows Driver</a>	v10.1.10 1/13/2021
<a href="#">CP210x VCP Mac OSX Driver</a>	v6.8.1 3/31/2021
<a href="#">CP210x Windows Drivers</a>	v6.7.6 9/3/2020
<a href="#">CP210x Windows Drivers with Serial Enumerator</a>	v6.7.6 9/3/2020
<a href="#">CP210x_5x_AppNote_Archive</a>	9/3/2020

[Show 5 more Software](#)

### Legacy OS Software Versions

Driver Package download links and support information

### Serial Enumeration Driver

What is the serial enumeration driver and why would I need it?

Feedback

## CH340 Drivers for Windows, Mac and Linux

**COVID-19 Level 1 Update:** Domestic parcels are shipping normally with Courier Post 1-4 days usually. Australia and US have delays but not too bad, about 2 weeks usually. Stock is running low or out for many items currently, due to covid induced supply chain issues, so don't delay, buy while I still have it in stock!

The CH340 chip is used by a number of Arduino compatible boards to provide USB connectivity, you may need to install a driver, don't panic, it's easier than falling off a log, and much less painful.

### Windows

---

(Manufacturer's Chinese Info Link)

- [Download the Windows CH340 Driver](#)
- Unzip the file
- Run the installer which you unzipped
- In the Arduino IDE when the CH340 is connected you will see a COM Port in the Tools > Serial Port menu, the COM number for your device may vary depending on your system.

<https://sparks.gogo.co.nz/ch340.html>

# Arduino IDE

+

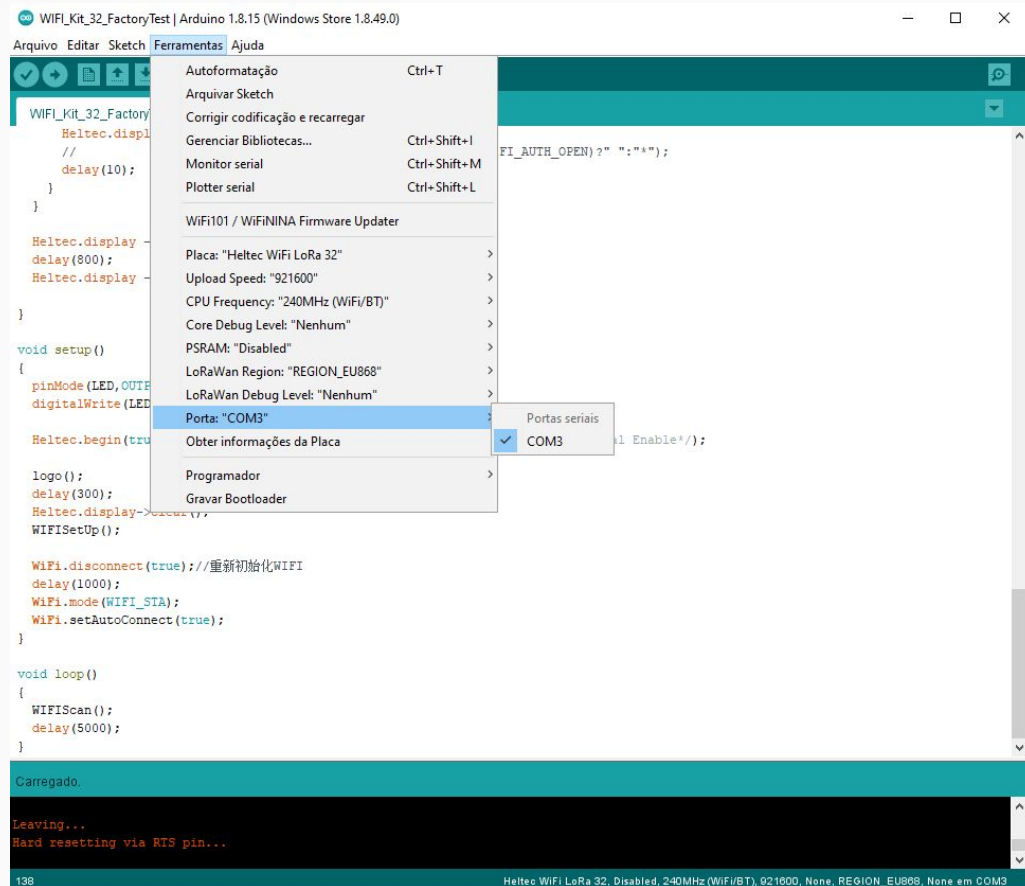
## URLs Adicionais para Gerenciadores de Placas

+

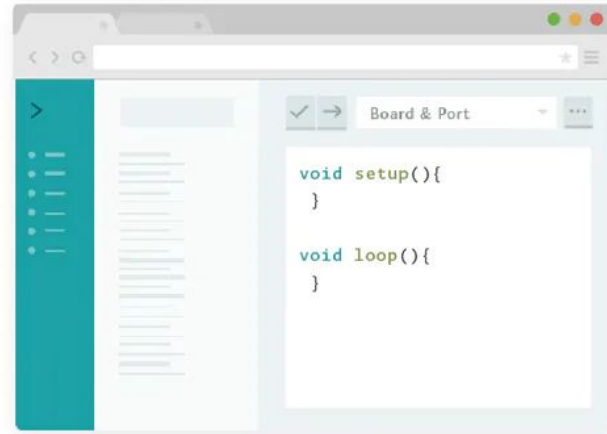
## Adição do suporte à placa ESP32

+

## Instalação do Driver

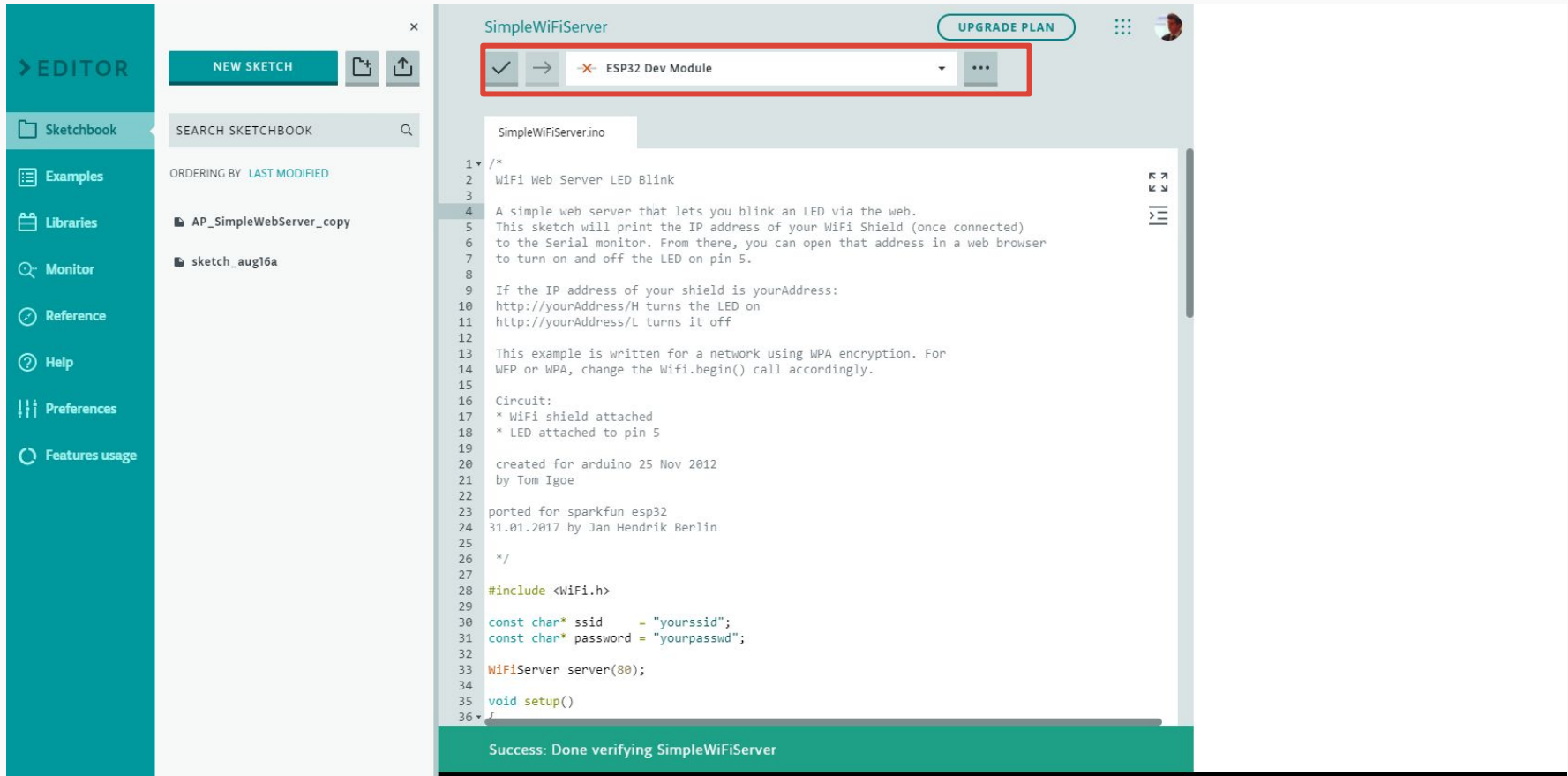






**Opção 2: Arduino CREATE Web Editor**

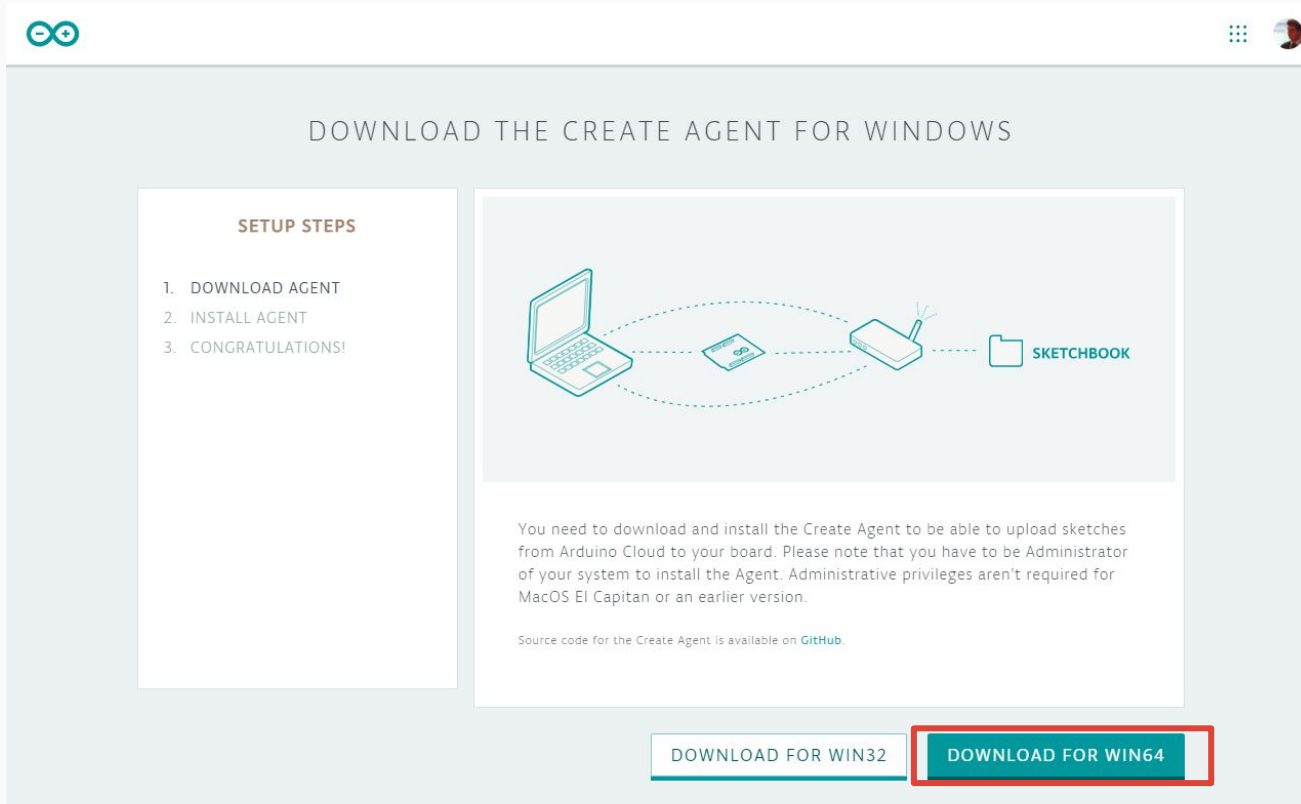
# Opção 2: Arduino Web Editor



The screenshot displays the Arduino Web Editor interface. On the left is a teal sidebar with navigation options: EDITOR, Sketchbook, Examples, Libraries, Monitor, Reference, Help, Preferences, and Features usage. The main workspace is titled 'SimpleWiFiServer' and features a 'NEW SKETCH' button, a search bar, and a list of sketches including 'AP\_SimpleWebServer\_copy' and 'sketch\_aug16a'. The code editor shows the following code:

```
1 /*  
2 WiFi Web Server LED Blink  
3  
4 A simple web server that lets you blink an LED via the web.  
5 This sketch will print the IP address of your WiFi Shield (once connected)  
6 to the Serial monitor. From there, you can open that address in a web browser  
7 to turn on and off the LED on pin 5.  
8  
9 If the IP address of your shield is yourAddress:  
10 http://yourAddress/H turns the LED on  
11 http://yourAddress/L turns it off  
12  
13 This example is written for a network using WPA encryption. For  
14 WEP or WPA, change the Wifi.begin() call accordingly.  
15  
16 Circuit:  
17 * WiFi shield attached  
18 * LED attached to pin 5  
19  
20 created for arduino 25 Nov 2012  
21 by Tom Igoe  
22  
23 ported for sparkfun esp32  
24 31.01.2017 by Jan Hendrik Berlin  
25  
26 */  
27  
28 #include <WiFi.h>  
29  
30 const char* ssid = "yourssid";  
31 const char* password = "yourpasswd";  
32  
33 WiFiServer server(80);  
34  
35 void setup()  
36 {
```

A red box highlights the hardware selection dropdown menu at the top of the editor, which currently shows 'ESP32 Dev Module'. A 'Success: Done verifying SimpleWiFiServer' message is visible at the bottom of the editor window.

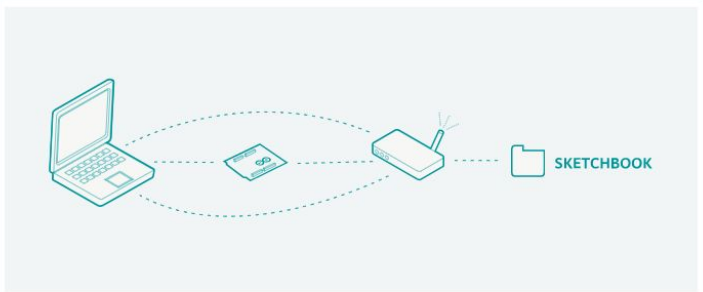


The screenshot shows the 'DOWNLOAD THE CREATE AGENT FOR WINDOWS' page. On the left, under 'SETUP STEPS', there is a list: 1. DOWNLOAD AGENT, 2. INSTALL AGENT, 3. CONGRATULATIONS!. In the center, a diagram illustrates the workflow: a laptop connects to an Arduino board, which connects to a router, which in turn connects to a 'SKETCHBOOK' folder. Below the diagram, a text block explains that the Create Agent is needed to upload sketches from Arduino Cloud to the board, and notes that administrative privileges are required for installation on Windows. A link to the source code on GitHub is provided. At the bottom, there are two buttons: 'DOWNLOAD FOR WIN32' and 'DOWNLOAD FOR WIN64', with the latter being highlighted with a red border.

**DOWNLOAD THE CREATE AGENT FOR WINDOWS**

**SETUP STEPS**

1. DOWNLOAD AGENT
2. INSTALL AGENT
3. CONGRATULATIONS!



You need to download and install the Create Agent to be able to upload sketches from Arduino Cloud to your board. Please note that you have to be Administrator of your system to install the Agent. Administrative privileges aren't required for MacOS El Capitan or an earlier version.

Source code for the Create Agent is available on [GitHub](#).

[DOWNLOAD FOR WIN32](#) [DOWNLOAD FOR WIN64](#)



The screenshot shows the Arduino Web Editor interface with a light blue background. At the top left, there is a zoom-in icon. At the top right, there are icons for a grid and a user profile. The main content area is titled "INSTALL THE CREATE AGENT FOR WINDOWS".

**SETUP STEPS**

- ✓ DOWNLOAD AGENT
- INSTALL AGENT
- CONGRATULATIONS!

**1**  **CHECK YOUR DOWNLOAD FOLDER**

**2**  **DOUBLE-CLICK THE INSTALLER**

**3**  **FOLLOW THE INSTRUCTIONS**

- 1 Look in your Download folder or wherever the Installer has been saved.
- 2 Double-click on the Installer.
- 3 Follow the instructions from the Installer. When finished come back here.

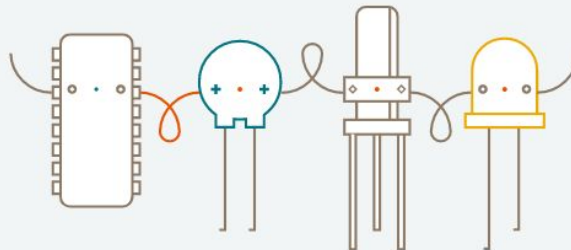
 Looking for installed agent...



CONGRATULATIONS! YOU'RE ALL SET.

### SETUP STEPS

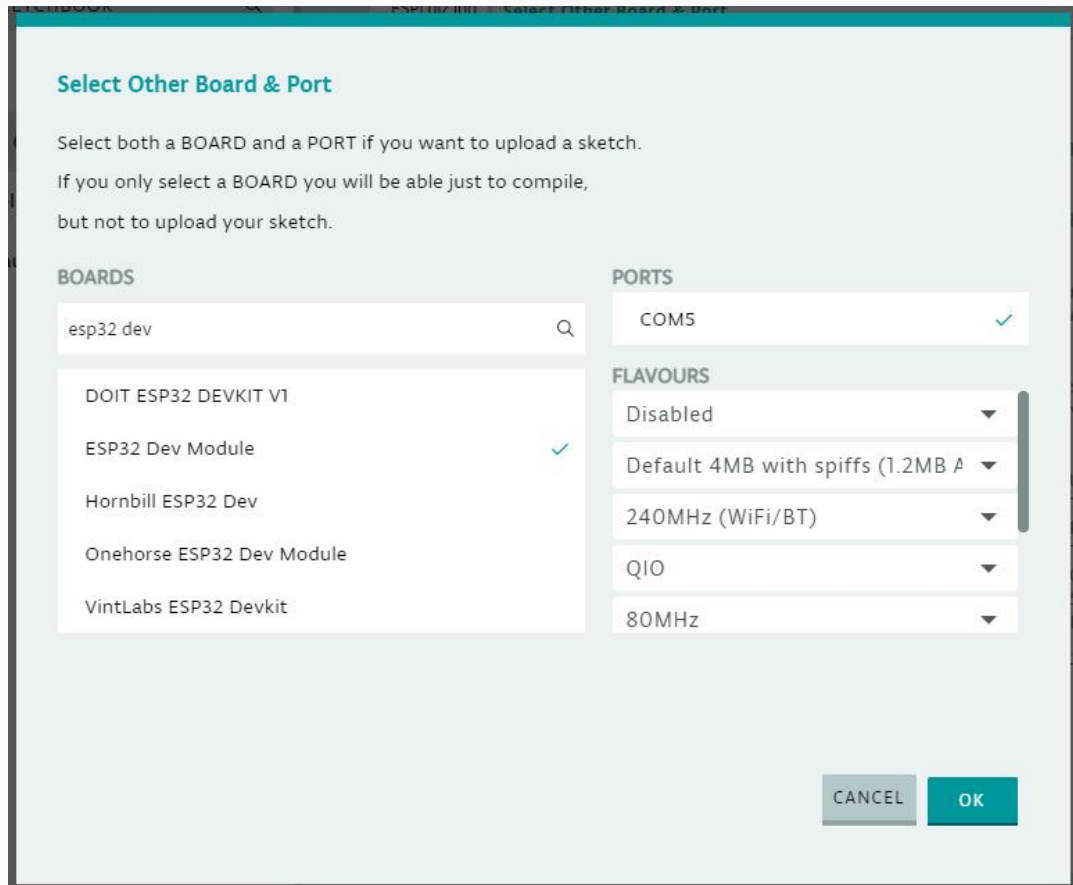
- ✓ DOWNLOAD AGENT
- ✓ INSTALL AGENT
- 3. CONGRATULATIONS!

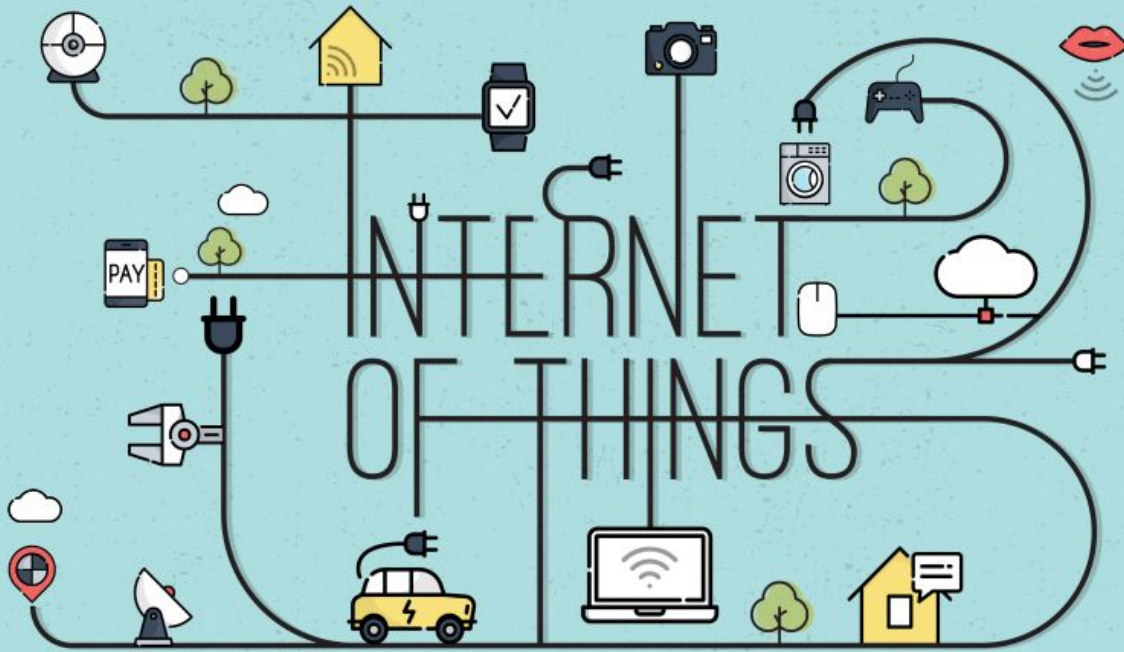


The Arduino Create Agent has been installed correctly and it's up and running! Go to the [Web Editor](#) and try it out!

[GO TO WEB EDITOR](#)

# Arduino Web Editor + Arduino CREATE Agent + Instalação do Driver





Professor: Luiz Felipe Oliveira

Dúvidas