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Get Started

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This document is intended to help you set up the software development environment for the hardware based on the ESP32 chip by Espressif. After that, a simple example will show you how to use ESP-IDF (Espressif IoT Development Framework) for menu configuration, then for building and flashing firmware onto an ESP32 board.

> **ⓘ Note**
>
> This is documentation for stable version v5.5.1 of ESP-IDF. Other ESP-IDF Versions are also available.

Introduction

ESP32 is a system on a chip that integrates the following features:

- Wi-Fi (2.4 GHz band)
- Bluetooth
- Dual high performance Xtensa® 32-bit LX6 CPU cores
- Ultra Low Power co-processor
- Multiple peripherals

Powered by 40 nm technology, ESP32 offers excellent power efficiency, RF performance, security, and reliability, making it suitable for a wide range of application scenarios and power consumption requirements.

Espressif provides basic hardware and software resources to help application developers realize their ideas using the ESP32 series hardware. The software development framework by Espressif is intended for development of Internet-of-Things (IoT) applications with Wi-Fi, Bluetooth, power management and several other system features.

What You Need

Hardware

- An **ESP32** board.
- **USB cable** - USB A / micro USB B.

- **Computer** running Windows, Linux, or macOS.

❶ Note

Currently, some of the development boards are using USB Type C connectors. Be sure you have the correct cable to connect your board!
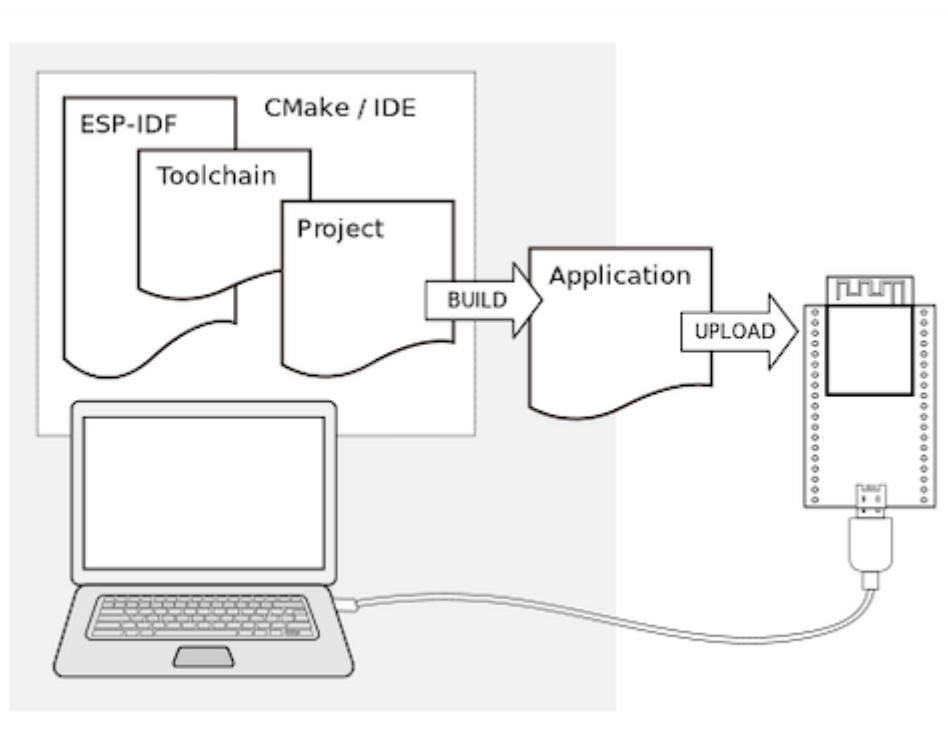
If you have one of ESP32 official development boards listed below, you can click on the link to learn more about the hardware.

- ESP32-DevKitC
- ESP32-DevKitM-1
- ESP-WROVER-KIT
- ESP32-PICO-KIT
- ESP32-Ethernet-Kit
- ESP32-PICO-KIT-1
- ESP32-PICO-DevKitM-2

Software

To start using ESP-IDF on **ESP32**, install the following software:

- **Toolchain** to compile code for ESP32
- **Build tools** - CMake and Ninja to build a full **Application** for ESP32
- **ESP-IDF** that essentially contains API (software libraries and source code) for ESP32 and scripts to operate the **Toolchain**

Installation

To install all the required software, we offer some different ways to facilitate this task. Choose from one of the available options.

IDE

> **❶ Note**
>
> We highly recommend installing the ESP-IDF through your favorite IDE.

- Eclipse Plugin
- VSCode Extension

Manual Installation

For the manual procedure, please select according to your operating system.

- Windows Installer
- Linux and macOS

Build Your First Project

If you already have the ESP-IDF installed and are not using an IDE, you can build your first project from the command line following the Start a Project on Windows or Start a Project on Linux and macOS.

Uninstall ESP-IDF

If you want to remove ESP-IDF, please follow Uninstall ESP-IDF.

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