# **[Demo 10: How to turn the Arduino ESP32 into an Access Point](http://www.iotsharing.com/2017/05/how-to-turn-esp32-into-access-point.html)**

**[1. Introduction](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**

[All the previous demonstrations which are related to WiFi, ESP32 operate in Station mode in which ESP32 will become a client of a WiFi network.  In this demonstration, we will make it an Access Point in which it is a WiFi emission point so that WiFi clients can connect to it. Note that ESP32 can operation in both Station and Access Point mode where it is a WiFi client and emit WiFi as well.](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)

**[2. Hardware](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**

[You do not need any extra hardware.](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)

**[3. Software](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**

[In order to set the](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WiFi mode for ESP32](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[we will use the function:  
-](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WiFi.mode(mode)](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[: where mode can be:](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WIFI\_OFF](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[(turn off WiFi),](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WIFI\_STA](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[(Station mode),](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WIFI\_AP](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[(Access Point mode),](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WIFI\_AP\_STA](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[(both Station and Access Point mode)  
-](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WiFi.begin(ssid, password)](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[: use this function to make ESP32 a WiFi client that connect to a network have ssid and password. If we use this function we need not to use WiFi.mode(WIFI\_STA).](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[WiFi.softAP(ssidAP, passwordAP)](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[:  use this function to make ESP32 an Access Point that has authentication information are ssidAP and passwordAP. If we use this function we need not to use WiFi.mode(WIFI\_AP)  
Let's make ESP32 an Access Point with authentication information below:](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)

**[- ssid](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[is](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**["ESP32ap"](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**

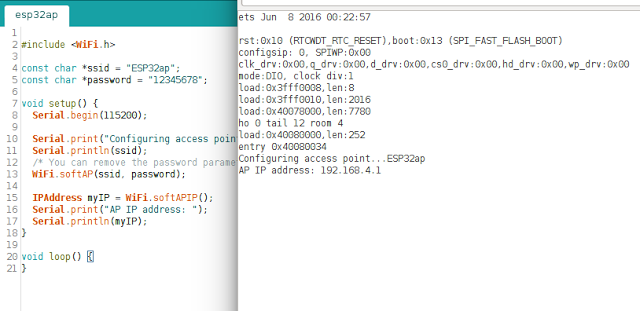
**[- password](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[is](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**["12345678"](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**

**[Note:](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**[the default IP add ress of ESP32 in AP mode is](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**["192.168.4.1"](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)**

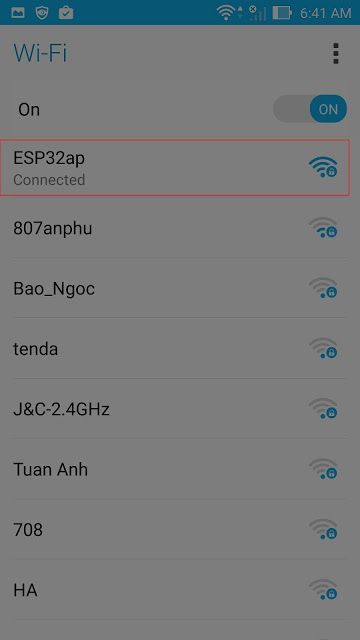
[Create an Arduino project and save as esp32ap with the code:](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)

|  |
| --- |
| [#include <WiFi.h>](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [const char \*ssid = "ESP32ap";](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [const char \*password = "12345678";](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [void setup() {](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [Serial.begin(115200);](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [Serial.println();](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [Serial.print("Configuring access point...");](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [/\* You can remove the password parameter if you want the AP to be open. \*/](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [WiFi.softAP(ssid, password);](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [IPAddress myIP = WiFi.softAPIP();](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [Serial.print("AP IP address: ");](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [Serial.println(myIP);](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [}](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [void loop() {](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html)  [}](http://www.iotsharing.com/2017/05/how-to-use-arduino-esp32-to-display-oled.html) |

**4. Result**

[](https://1.bp.blogspot.com/-fqIOtg-k6Us/WSD8mOwGgFI/AAAAAAAAD48/XgURsi2-7NIur1aw2N-FukyamH4y0XKkwCEw/s1600/ap1.png)

**Figure: ESP32 as AP mode with default local IP is 192.168.4.1**

[](https://3.bp.blogspot.com/-nTvvH8pJu18/WSD7tUl5ocI/AAAAAAAAD44/O2ialW72Iy4EuLr452knKRfgeJ4MNEYpwCEw/s1600/ap2.jpg)

**Figure: from smartphone you will see AP (ESP32ap), fill password and connected**