

ESP32 vs ESP32C3 SMING idf-v5.2-b

Basic_WiFi sample

Same sample, different behaviors.

ESP32

AP activated and I can connect to it

The image shows two side-by-side screenshots. On the left is a terminal window displaying the serial output of an ESP32. The logs show the device booting into AP mode, successfully starting a DHCP server on interface WIFI_AP_DEF with IP 192.168.4.1. It then receives a connection attempt from an iPhone (MAC: e8:2a:44:b3:93:bb) but fails to connect because it cannot find an AP. The logs also show the device scanning for nearby Wi-Fi networks, including 'Sming InternetOfThings' and 'jmWslRc_7828'. On the right is a screenshot of an iPhone's Wi-Fi settings menu. The Wi-Fi toggle is turned on. The list of available networks includes 'Sming InternetOfThings' (with a green status icon and 'No internet, open'), 'iphone', and 'jmWslRc_7828'. A 'Disconnect' button is visible next to the 'Sming InternetOfThings' network.

ESP32C3

Access Point "SmingInternetOfThings" not visible in PC Wi-Fi list of AP and I can't connect to it

The image shows two side-by-side screenshots. On the left is a terminal window displaying the serial output of an ESP32C3. The logs show the device booting into AP mode, successfully starting a DHCP server on interface WIFI_AP_DEF with IP 192.168.4.1. It then receives a connection attempt from an iPhone (MAC: e8:2a:44:b3:93:bb) but fails to connect because it cannot find an AP. The logs also show the device scanning for nearby Wi-Fi networks, including 'Sming InternetOfThings' and 'jmWslRc_7828'. On the right is a screenshot of an iPhone's Wi-Fi settings menu. The Wi-Fi toggle is turned on. The list of available networks includes 'iphone' and 'jmWslRc_7828'. The 'Sming InternetOfThings' network is not visible in this list. A 'More Wi-Fi settings' link is visible at the bottom of the menu.

Http Server_Bootstrap sample

Same sample, different behaviors.

ESP32

Web server working and able to show Web Page in Browser

New CPU frequency is 160 MHz
245103 event WIFI_EVENT|2

E (659) wifi:sta is connecting, return error
252403 event WIFI_EVENT|12

253867 event WIFI_EVENT|13

I (3059) wifi:new:<6,0>, old:<1,1>, ap:<255,255>, sta:<6,0>, prof:1
I (3309) wifi:state: init -> auth (b0)
I (3319) wifi:state: auth -> assoc (0)
I (3329) wifi:state: assoc -> run (10)
I (3349) wifi:connected with iphone, aid = 5, channel 6, BW20, bssid = 5e:3e:1e:98:70:ba
I (3349) wifi:security: WPA2-PSK, phy: bgn, rssi: -20
I (3349) wifi:pm start, type: 1

I (3349) wifi:dp: 1, bi: 102400, li: 3, scale listen interval from 307200 us to 307200 us
2949336 event WIFI_EVENT|4

2951161 connect to ssid iphone, channel 6

I (3399) wifi:dp: 2, bi: 102400, li: 4, scale listen interval from 307200 us to 409600 us
I (3399) wifi:AP's beacon interval = 102400 us, DTIM period = 2
3954025 event IP_EVENT|0

3954283 ip:192.168.11.53,mask:255.255.255.0,gw:192.168.11.97

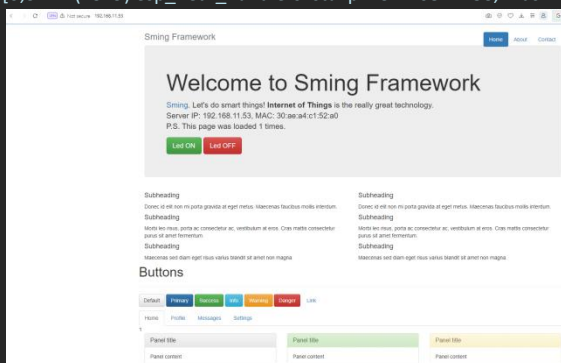
3956422 '/' registered
3956651 '/hello' registered
3956737 '*!' registered

=== WEB SERVER STARTED ===

192.168.11.53

=====

[0;32ml (4379) esp_netif_handlers: sta ip: 192.168.11.53, mask: 255.255.255.0, gw: 192.168.11.97[0m



ESP32C3

Can't connect to access point.

```
New CPU frequency is 80 MHz  
210487 event WIFI_EVENT|2
```

```
E (488) wifi:sta is connecting, return error  
217361 event WIFI_EVENT|12
```

```
219315 event WIFI_EVENT|13
```

```
I (2878) wifi:new:<6,0>, old:<1,1>, ap:<255,255>, sta:<6,0>, prof:1  
I (3448) wifi:state: init -> auth (b0)  
I (4448) wifi:state: auth -> init (200)  
I (4448) wifi:new:<6,0>, old:<6,0>, ap:<255,255>, sta:<6,0>, prof:1  
4174381 event WIFI_EVENT|5
```

```
4174444 disconnect from ssid iphone, reason 2
```

```
New CPU frequency is 160 MHz  
188014 event WIFI_EVENT|2
```

```
E (459) wifi:sta is connecting, return error  
194731 event WIFI_EVENT|12
```

```
196842 event WIFI_EVENT|13
```

```
I (2859) wifi:new:<6,0>, old:<1,1>, ap:<255,255>, sta:<6,0>, prof:1  
I (3159) wifi:state: init -> auth (b0)  
I (4159) wifi:state: auth -> init (200)  
I (4159) wifi:new:<6,0>, old:<6,0>, ap:<255,255>, sta:<6,0>, prof:1  
3886688 event WIFI_EVENT|5
```

```
3886919 disconnect from ssid iphone, reason 2
```

Http_websocket Sample

On ESP32, application works, but ESP32C3 can't connect to AP

ESP32

```
[0;32ml (511) spi_flash: detected chip: winbond[0m
[0;32ml (515) spi_flash: flash io: dio[0m
[0;32ml (570) phy_init: phy_version 4780,16b31a7,Sep 22 2023,20:42:16[0m
I (640) wifi:mode : sta (30:ae:a4:c1:52:a0) + softAP (30:ae:a4:c1:52:a1)
I (640) wifi:enable tsf
I (640) wifi:Total power save buffer number: 16
I (640) wifi:Init max length of beacon: 752/752
I (650) wifi:Init max length of beacon: 752/752
I (660) wifi:mode : sta (30:ae:a4:c1:52:a0)
243509 event WIFI_EVENT|2

E (660) wifi:sta is connecting, return error
249302 event WIFI_EVENT|12

250779 event WIFI_EVENT|13

I (3060) wifi:new:<6,0>, old:<1,1>, ap:<255,255>, sta:<6,0>, prof:1
I (3310) wifi:state: init -> auth (b0)
I (3320) wifi:state: auth -> assoc (0)
I (3330) wifi:state: assoc -> run (10)
I (3350) wifi:connected with iphone, aid = 5, channel 6, BW20, bssid = 5e:3e:1e:98:70:ba
I (3350) wifi:security: WPA2-PSK, phy: bgn, rssi: -41
I (3350) wifi:pm start, type: 1

I (3350) wifi:dp: 1, bi: 102400, li: 3, scale listen interval from 307200 us to 307200 us
2948604 event WIFI_EVENT|4

2950425 connect to ssid iphone, channel 6

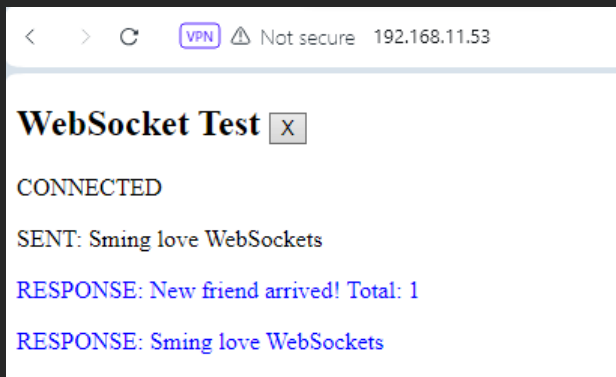
I (3390) wifi:dp: 2, bi: 102400, li: 4, scale listen interval from 307200 us to 409600 us
I (3390) wifi:AP's beacon interval = 102400 us, DTIM period = 2
3954099 event IP_EVENT|0

3954368 ip:192.168.11.53,mask:255.255.255.0,gw:192.168.11.97

3954858 '/' registered
3955077 '*' registered

=== WEB SERVER STARTED ===
192.168.11.53
=====

[0;32ml (4370) esp_netif_handlers: sta ip: 192.168.11.53, mask: 255.255.255.0, gw: 192.168.11.97[0m
I (31980) wifi:<ba-add>idx:0 (ifx:0, 5e:3e:1e:98:70:ba), tid:0, ssn:16, winSize:64
```



ESP32C3

```
[0;32ml (357) spi_flash: detected chip: generic[0m
[0;32ml (362) spi_flash: flash io: qio[0m
[0;32ml (366) sleep: Configure to isolate all GPIO pins in sleep state[0m
[0;32ml (372) sleep: Enable automatic switching of GPIO sleep configuration[0m
@[0;32ml (410) phy_init: phy_version 1130,b4e4b80,Sep 5 2023,11:09:30[0m
I (440) wifi:mode : sta (34:b7:da:fb:46:a4) + softAP (34:b7:da:fb:46:a5)
I (440) wifi:enable tsf
I (440) wifi:Total power save buffer number: 16
I (440) wifi:Init max length of beacon: 752/752
I (450) wifi:Init max length of beacon: 752/752
I (450) wifi:mode : sta (34:b7:da:fb:46:a4)
184052 event WIFI_EVENT|2

E (460) wifi:sta is connecting, return error
190592 event WIFI_EVENT|12

192700 event WIFI_EVENT|13

I (2860) wifi:new:<6,0>, old:<1,1>, ap:<255,255>, sta:<6,0>, prof:1
I (3160) wifi:state: init -> auth (b0)
I (4160) wifi:state: auth -> init (200)
I (4160) wifi:new:<6,0>, old:<6,0>, ap:<255,255>, sta:<6,0>, prof:1
3887700 event WIFI_EVENT|5

3887913 disconnect from ssid iphone, reason 2
```

BasicWebSkeleton_App

ESP32

Access Point visible, can connect to it from PC, but can't access the web page using 192.168.4.1

Debug message "Starting OWN AP" not sent to terminal. It looks like WifiAccessPoint is already enabled.

The image shows three screenshots related to an ESP32 project. The top screenshot is a terminal log showing system boot messages and Wi-Fi events. The middle screenshot shows the Android Wi-Fi settings screen with the Wi-Fi toggle turned on and a list of networks including 'ESP_C152A1'. The bottom screenshot shows a code editor with a C++ function `STADisconnect` that checks if the Wi-Fi access point is enabled before attempting to start it. A red arrow points to the `if(!WifiAccessPoint.isEnabled())` line. The bottom-most screenshot shows a web browser error page for `http://192.168.4.1/` that is unreachable.

```
0.32m (511) spi_flash: detected chip: winbond[0m
0.32m (515) spi_flash: flash io: dci[0m
139530 [data/spiffs] Found 'spiffs'0
147934 mount() returned 0 (Success)
148067 File system initialised
155162 open('therm.conf'): NotFound (-14)
0.32m (570) phy_init: phy_version 4780.16b31a7.Sep 22 2023.20:42:16[0m
0.33mW (570) phy_init: failed to load RF calibration data (0x1102), falling back to full calibration[0m
I (660) wifi.mode: sta (30:ae:a4:c1:52:a0) + softAP (30:ae:a4:c1:52:a1)
I (660) wifi.enable: tsf
I (660) wifi: Total power save buffer number: 16
I (660) wifi: Init max length of beacon: 752/752
I (660) wifi: Init max length of beacon: 752/752
271090 event WIFI_EVENT|2

E (690) wifi.sta: is connecting, return error
273305 event WIFI_EVENT|12

274041 '/config.json' registered
274205 '/state' registered
274704 STA: 0.0.0.0
276242 AP: 0.0.0.0
3106497 event WIFI_EVENT|5

3106796 disconnect from ssid: ssid, reason: 201
3106885 DISCONNECT - SSID: ssid, REASON: No AP found

I (40740) wifi.new: <1,1>, old:<1,1>, ap:<1,1>, sta:<0,0>, prof:1
I (40740) wifi.station: e8:2a:44:b3:93:bb join, AID=1, bgn: 4DU
40332214 event WIFI_EVENT|14

40333653 station: e8:2a:44:b3:93:bb join, AID = 1

I (40780) wifi-<ba-add>-idx2 (fx:1, e8:2a:44:b3:93:bb), bd:0, ssn:0, winSize:64
I (47630) wifi-<ba-add>-idx3 (fx:1, e8:2a:44:b3:93:bb), bd:6, ssn:0, winSize:64

static void STADisconnect(const String& ssid, MacAddress bssid, WifiDisconnectReason reason)
{
    debugf("DISCONNECT - SSID: %s, REASON: %s\n", ssid.c_str(), WifiEvents.getDisconnectReasonDesc(reason).c_str());
    if(!WifiAccessPoint.isEnabled()) {
        debugf("Starting OWN AP");
        WifiStation.disconnect();
        WifiAccessPoint.enable(true);
        WifiStation.connect();
    }
}
```

192.168.4.1

Hmmm... can't reach this page

http://192.168.4.1/ is unreachable.

Diagnose issue Refresh

Adding `WifiAccessPoint.enable(false)` in `init()` makes app rebooting in a loop.

Where AccessPoint gets configured ?

```
139525 [data/spiffs] Found 'spiffs0'
147907 mount() returned 0 (Success)
148016 File system initialised
155119 open('.therm.conf'): NotFound (-14)
155317 activeConfig found, try starting Station
[[0:32ml (570) phy_init: phy_version 4780,16b31a7,Sep 22 2023,20:42:16[[0m
[[0:33mW (570) phy_init: failed to load RF calibration data (0x1102), falling back to full cal
I (660) wifi: mode : sta (30:ae:a4:c1:52:a0) + softAP (30:ae:a4:c1:52:a1)
I (660) wifi: enable tsf
I (660) wifi: Total power save buffer number: 16
I (660) wifi: Init max length of beacon: 752/752
I (670) wifi: Init max length of beacon: 752/752
274576 event WIFI_EVENT|2

E (690) wifi: sta is connecting, return error
276745 event WIFI_EVENT|12

277493 '/config.json' registered
277649 '/state' registered
278515 STA: 0.0.0.0
280053 AP: 0.0.0.0
3109850 event WIFI_EVENT|5

3110145 disconnect from ssid ssid, reason 201

3110242 DISCONNECT - SSID: ssid, REASON: No AP found
```



Stopping investigation on this sample.