Amazon FreeRTOS Workshop

Amazon Freertos workshop using the M5 StickC

Lab 0 - Setup Lab 1 - Create your own AWS IoT Button Lab 2 - Interract with the Thing Lab 3 - Alexa

View the Project on GitHub onsankawai/amazon-freertos-m5stickc-workshop

Flashing Amazon FreeRTOS compiled firmware to your M5STICKC (ESP32)

- 1. Download and install Silicon Labs CP2104 drivers
- 2. Connect your ESP32 DevKitC board to the laptop using provided USB cable and identify which port it is connected to On Windows it will be COM3 for example, on Mac OS typically it enumerated as /dev/cu.usbserial-XXXXXXXX (check ls /dev/cu.*) and on Linux most likely /dev/ttyUSB0
- 3. Install esptool and flash the firware

Windows

- Download binary from here
- Drop it to the subfolder that already in your PATH or add subfolder you placed esptool to your PATH variable
- Open Commnd Prompt and execute following command (from the directory you places 3 downloaded files):

esptool --chip esp32 --port COM3 --baud 115200 --before default_reset --c

Mac/Linux

Install esptool.py:

sudo pip install esptool pyserial

cd [THE FOLDER WHERE YOU DOWNLOADED THE 3 FILES IN PREVIOUS STEP] esptool.py --chip esp32 --port /dev/cu.usbserial-XXXXXXXX --baud 115200 --bef

1. Monitor the flashing process:

```
bash-3.2$ esptool.py --chip esp32 --port /dev/cu.usbserial-XXXXXXXX --baud 11
esptool.py v2.5.1
Serial port /dev/cu.usbserial-XXXXXXXX
Connecting...._
Chip is ESP32D0WDQ5 (revision 1)
Features: WiFi, BT, Dual Core
MAC: 24:0a:c4:23:de:7c
Uploading stub...
Running stub...
Stub running...
Changing baud rate to 115200
Changed.
Configuring flash size...
Auto-detected Flash size: 4MB
Flash params set to 0x0220
Compressed 21936 bytes to 13046...
Wrote 21936 bytes (13046 compressed) at 0x00001000 in 0.2 seconds (effective
Hash of data verified.
Compressed 628432 bytes to 398564...
Wrote 628432 bytes (398564 compressed) at 0x00020000 in 5.9 seconds (effective
Hash of data verified.
Compressed 3072 bytes to 119...
Wrote 3072 bytes (119 compressed) at 0x00008000 in 0.0 seconds (effective 32!
Hash of data verified.
Leaving...
Hard resetting via RTS pin...
```

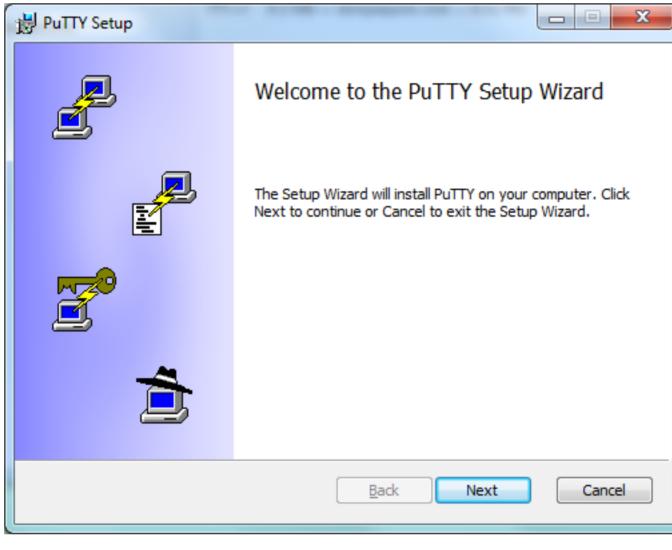
1. Monitor code execution through the serial console

You can download putty from http://www.putty.org/ or

Windows

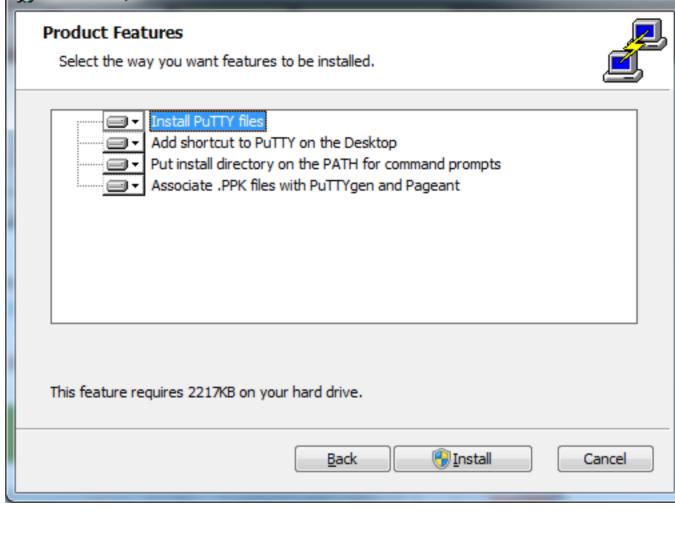
- 5.1.1 Install PuTTY
 - http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

5.1.2 Run Installation wizard



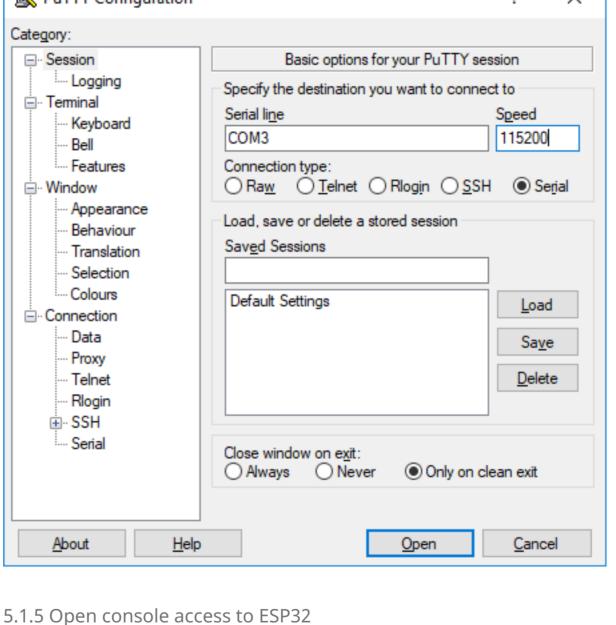
PuTTY Setup

5.1.3 Check all options



RuTTY Configuration ×

5.1.4 Setup the port and speed (Port COM3 and 115200 in our case)



COM3 - PuTTY

```
×
I (354) wifi: Init static rx buffer num: 10
  (354) wifi: Init dynamic rx buffer num: 32
  (364) wifi: wifi power manager task: 0x3ffcd5d8 prio: 21 stack: 2560
3 26 [main] WiFi module initialized. Connecting to AP hopper...
  (424) phy: phy version: 383.0, 79a622c, Jan 30 2018, 15:38:06, 0, 0
  (434) wifi: mode : sta (24:0a:c4:23:de:7c)
  (434) WIFI: SYSTEM EVENT STA START
  (1154) wifi: n:6 0, o:1 0, ap:255 255, sta:6 0, prof:1
  (2134) wifi: state: init -> auth (b0)
Watchdog reset
  (2144) wifi: state: auth -> assoc (0)
  (2154) wifi: state: assoc -> run (10)
  (2204) wifi: connected with hopper, channel 6
  (2204) WIFI: SYSTEM EVENT STA CONNECTED
4 302 [IP-task] vDHCPProcess: offer c0a82b05ip
  (3194) event: sta ip: 192.168.43.5, mask: 255.255.255.0, gw: 192.168.43.1
  (3194) WIFI: SYSTEM EVENT STA GOT IP
5 309 [IP-task] vDHCPProcess: offer c0a82b05ip
6 309 [main] WiFi Connected to AP. Creating tasks which use network...
led_strip.access_semaphore is 3ffcdd2c
Led strip initialized: 1
::: Motor task tick, ticks ramained = 0
SHADOW ClientConnect ...
Mac/Linux
```

```
5.2.1 Use screen command to see the ESP32 console:
```

5.2.2 In order to exit screen press Ctrl + A and then K

screen /dev/cu.usbserial-XXXXXXXX 115200

Next Step

BACK