

*****Default*****

Pico_W BLE Client/Server 04/13/23

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Forked from this link

<https://github.com/ErichStyger/mcuoneclipse>

found in the google post

<https://mcuoneclipse.com/2023/03/19/ble-with-wifi-and-freertos-on-raspberry-pi-pico-w/>

Build steps on pi4-50

git clone <https://github.com/develone/mcuoneclipse.git>

cd mcuoneclipse

cd Examples

cd RaspberryPiPico/

cd pico_W_BLE/

cmake -G"Unix Makefiles" -DCMAKE_BUILD_TYPE=Debug .

make

[27%] Building C object build/src/CMakeFiles/SrcLib.dir/Shell.c.obj

/home/devel/xx/mcuoneclipse/Examples/RaspberryPiPico/pico_W_BLE/src/Shell.c:19:12: fatal
error: MinINI/McuFlash.h: No such file or directory

```
#include "MinINI/McuFlash.h"
```

cp -R ../McuLib/minIni/ src/

mv src/minIni/ src/MinINI

make

[100%] linking CXX executable pico_W_BLE.elf

[100%] Built target pico_W_BLE

ls -la

total 11048

drwxr-xr-x 9 devel devel 4096 Apr 15 19:42 .

drwxr-xr-x 9 devel devel 4096 Apr 15 19:08 ..

drwxr-xr-x 4 devel devel 4096 Apr 15 19:30 build

-rw-r--r-- 1 devel devel 327 Apr 15 19:08 clean.bat

-rw-r--r-- 1 devel devel 19255 Apr 15 19:30 CMakeCache.txt

-rw-r--r-- 1 devel devel 14582 Apr 15 19:30 CMakeDoxyfile.in

```

-rw-r--r-- 1 devel devel 20173 Apr 15 19:30 CMakeDoxygenDefaults.cmake
drwxr-xr-x 6 devel devel 4096 Apr 15 19:42 CMakeFiles
-rw-r--r-- 1 devel devel 52 Apr 15 19:08 'cmake init.bat'
-rw-r--r-- 1 devel devel 1995 Apr 15 19:30 cmake_install.cmake
-rw-r--r-- 1 devel devel 1314 Apr 15 19:08 CMakeLists.txt
-rw-r--r-- 1 devel devel 14107 Apr 15 19:08 .cproject
drwxr-xr-x 6 devel devel 4096 Apr 15 19:30 elf2uf2
drwxr-xr-x 3 devel devel 4096 Apr 15 19:30 generated
-rw-r--r-- 1 devel devel 196 Apr 15 19:08 .gitignore
-rw-r--r-- 1 devel devel 418538 Apr 15 19:30 Makefile
drwxr-xr-x 6 devel devel 4096 Apr 15 19:30 pico-sdk
-rw-r--r-- 1 devel devel 3165 Apr 15 19:08 pico_sdk_import.cmake
-rwxr-xr-x 1 devel devel 474260 Apr 15 19:42 pico_W_BLE.bin
-rw-r--r-- 1 devel devel 7674 Apr 15 19:08 'pico_W_BLE Debug J-Link.launch'
-rw-r--r-- 1 devel devel 5900 Apr 15 19:08 'pico_W_BLE-Debug_picoHouse OpenOCD
Debug.launch'
-rw-r--r-- 1 devel devel 3540785 Apr 15 19:42 pico_W_BLE.dis
-rwxr-xr-x 1 devel devel 2990928 Apr 15 19:42 pico_W_BLE.elf
-rw-r--r-- 1 devel devel 1431999 Apr 15 19:42 pico_W_BLE.elf.map
-rw-r--r-- 1 devel devel 1334036 Apr 15 19:42 pico_W_BLE.hex
-rw-r--r-- 1 devel devel 948736 Apr 15 19:42 pico_W_BLE.uf2
drwxr-xr-x 3 devel devel 4096 Apr 15 19:31 pioasm
-rw-r--r-- 1 devel devel 968 Apr 15 19:08 .project
-rw-r--r-- 1 devel devel 1055 Apr 15 19:08 readme.txt
drwxr-xr-x 3 devel devel 4096 Apr 15 19:38 src

```

Copied the folder mcuoneclipse to pi4-20.

Modified the file src/app_platform.h

```

git diff src/app_platform.h
diff --git a/Examples/RaspberryPiPico/pico_W_BLE/src/app_platform.h
b/Examples/RaspberryPiPico/pico_W_BLE/src/app_platform.h
index 382d935d4..8a9517fac 100644
--- a/Examples/RaspberryPiPico/pico_W_BLE/src/app_platform.h
+++ b/Examples/RaspberryPiPico/pico_W_BLE/src/app_platform.h
@@ -8,7 +8,7 @@
#define APP_PLATFORM_H_

/* client: getting data from the server */
-#define PL_CONFIG_STANDALONE_BLE_CLIENT (0) /* << change this to switch between
client and server implementation */
+#define PL_CONFIG_STANDALONE_BLE_CLIENT (1) /* << change this to switch between
client and server implementation */

/* server: providing temperature values to the client */
#define PL_CONFIG_STANDALONE_BLE_SERVER (1 && !
PL_CONFIG_STANDALONE_BLE_CLIENT)

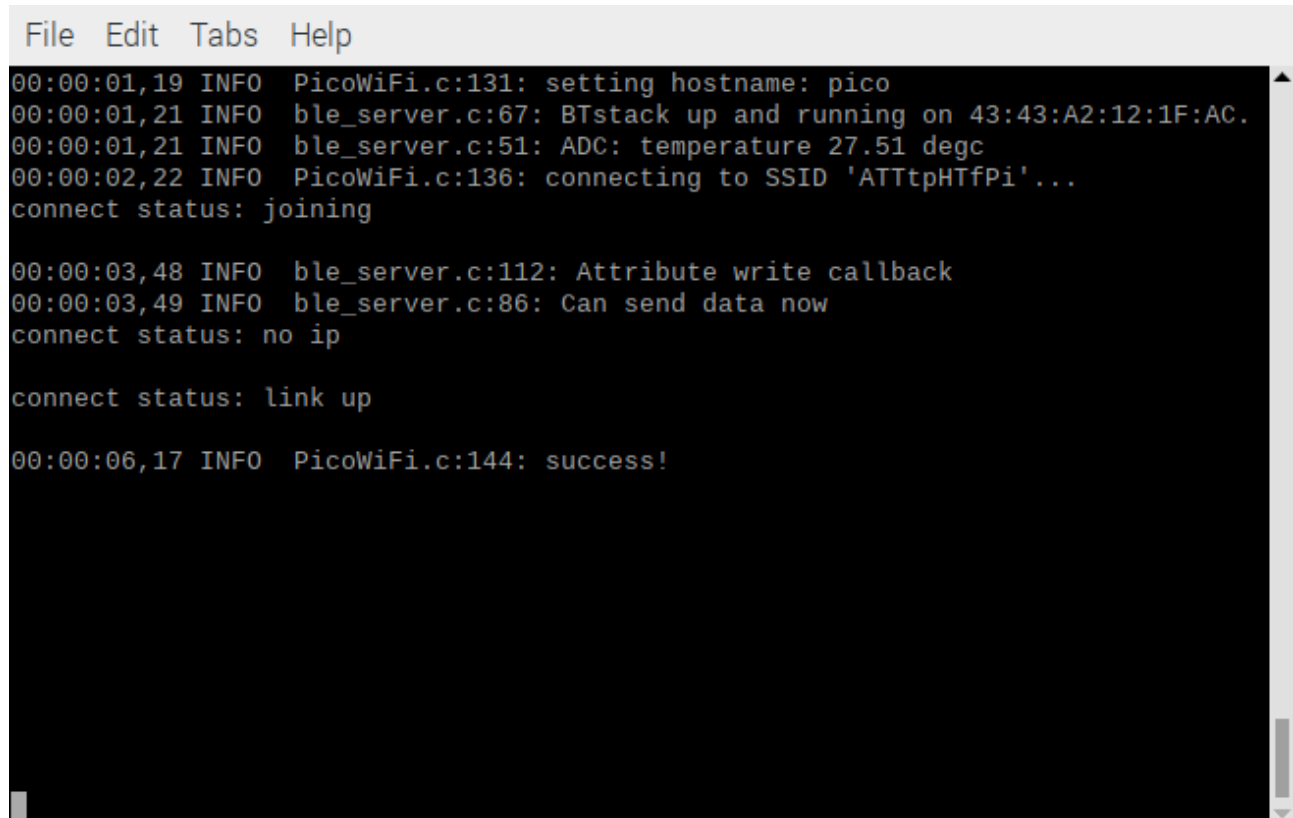
```

Used the following script to program the Server/Client using openocd.

```
#!/bin/bash
```

```
openocd -f interface/raspberrypi-swd.cfg -f target/rp2040.cfg -c "program pico_W_BLE.elf  
verify reset exit"
```

Server start

A screenshot of a terminal window with a menu bar at the top containing 'File', 'Edit', 'Tabs', and 'Help'. The terminal displays log messages from a PicoWiFi device. The messages include setting the hostname to 'pico', initializing the BTstack, reporting the ADC temperature as 27.51 degC, attempting to connect to the SSID 'ATTtpHTfPi', and finally reporting 'success!' after a link is established. The log entries are timestamped and include component names like PicoWiFi.c and ble_server.c.

```
File Edit Tabs Help
00:00:01,19 INFO PicoWiFi.c:131: setting hostname: pico
00:00:01,21 INFO ble_server.c:67: BTstack up and running on 43:43:A2:12:1F:AC.
00:00:01,21 INFO ble_server.c:51: ADC: temperature 27.51 degC
00:00:02,22 INFO PicoWiFi.c:136: connecting to SSID 'ATTtpHTfPi'...
connect status: joining

00:00:03,48 INFO ble_server.c:112: Attribute write callback
00:00:03,49 INFO ble_server.c:86: Can send data now
connect status: no ip

connect status: link up

00:00:06,17 INFO PicoWiFi.c:144: success!
```

Serving sending data to client

```

File Edit Tabs Help
00:00:01,19 INFO PicoWiFi.c:131: setting hostname: pico
00:00:01,21 INFO ble_server.c:67: BTstack up and running on 43:43:A2:12:1F:AC.
00:00:01,21 INFO ble_server.c:51: ADC: temperature 27.51 degc
00:00:02,22 INFO PicoWiFi.c:136: connecting to SSID 'ATTtpHTfPi'...
connect status: joining

00:00:03,48 INFO ble_server.c:112: Attribute write callback
00:00:03,49 INFO ble_server.c:86: Can send data now
connect status: no ip

connect status: link up

00:00:06,17 INFO PicoWiFi.c:144: success!
00:00:08,15 INFO dns_resolver.c:20: 'pool.ntp.org' resolved to 38.229.59.9
00:00:08,25 INFO ntp_client.c:44: got ntp response: 16/04/2023 14:59:38
14:59:40,36 INFO ble_server.c:51: ADC: temperature 27.51 degc
14:59:40,36 INFO ble_server.c:86: Can send data now
14:59:50,81 INFO ble_server.c:51: ADC: temperature 27.51 degc
14:59:50,81 INFO ble_server.c:86: Can send data now
15:00:01,26 INFO ble_server.c:51: ADC: temperature 27.51 degc
15:00:01,26 INFO ble_server.c:86: Can send data now
15:00:11,77 INFO ble_server.c:51: ADC: temperature 27.51 degc
15:00:12,21 INFO ble_server.c:86: Can send data now

```

Client receiving the temperature data from Server using BLE

```

File Edit Tabs Help
13:06:44,47 INFO ble_client.c:150: read temp 27.98 degc
13:06:54,94 INFO ble_client.c:147: Indication value len 2
13:06:54,94 INFO ble_client.c:150: read temp 28.44 degc
13:07:05,41 INFO ble_client.c:147: Indication value len 2
13:07:05,41 INFO ble_client.c:150: read temp 27.98 degc
13:07:15,81 INFO ble_client.c:147: Indication value len 2
13:07:15,82 INFO ble_client.c:150: read temp 27.98 degc
13:07:26,31 INFO ble_client.c:147: Indication value len 2
13:07:26,32 INFO ble_client.c:150: read temp 27.98 degc
13:07:36,75 INFO ble_client.c:147: Indication value len 2
13:07:36,75 INFO ble_client.c:150: read temp 27.98 degc
13:07:47,16 INFO ble_client.c:147: Indication value len 2
13:07:47,16 INFO ble_client.c:150: read temp 27.98 degc
13:07:57,69 INFO ble_client.c:147: Indication value len 2
13:07:57,69 INFO ble_client.c:150: read temp 27.98 degc
13:08:08,06 INFO ble_client.c:147: Indication value len 2
13:08:08,07 INFO ble_client.c:150: read temp 27.98 degc
13:08:18,53 INFO ble_client.c:147: Indication value len 2
13:08:18,53 INFO ble_client.c:150: read temp 27.98 degc
13:08:28,97 INFO ble_client.c:147: Indication value len 2
13:08:28,97 INFO ble_client.c:150: read temp 27.98 degc
13:08:39,41 INFO ble_client.c:147: Indication value len 2
13:08:39,41 INFO ble_client.c:150: read temp 27.98 degc

```