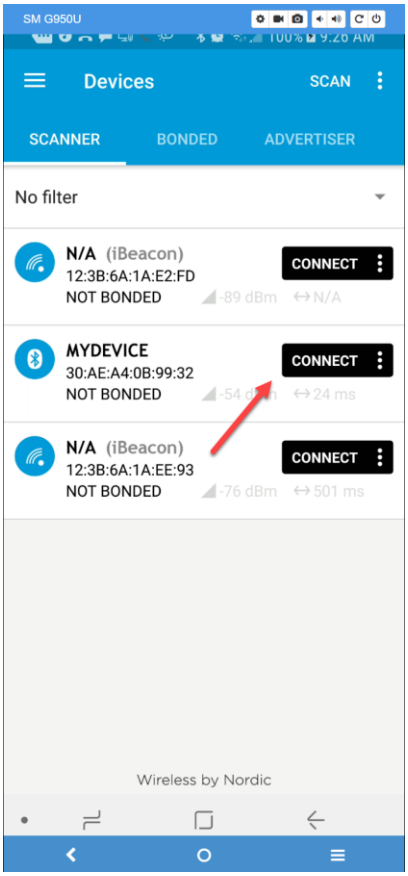
2017-10-07

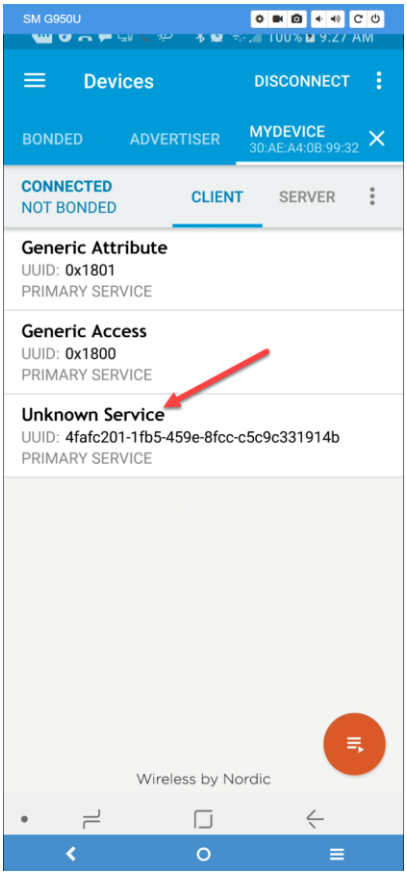
Issue #109

1. Create a template app called issue109. This becomes <issue109> in the following notes
2. cd <issue109>
3. mkdir components
4. cd components
5. Copy the cpp_utils component from Repository into this directory
6. delete main/main.c
7. Copy in
    a. main/main.cpp
    b. main/Sample1.cpp
8. Run make menuconfig. I changed
    a. Serial flash > baud rate 921600
    b. Serial flash > use compressed upload
    c. Conponent Config > Bluetooth (enabled)
    d. Component config > log output > default log verbosity > Verbose
9. Make all (I used "make -j5")
10. Flash your ESP32 (I used "make flash monitor")

We are now ready for testing. I run up a copy of "nRF Connect" on Android, and scan. I find an entry called "MYDEVICE" and connect:



We see the service exposed from the BLE Server as is shown in the following example:



Let us call this the "working case". This is what we expect to see.

Now we change the BLE C++ code in one small way. Open the file called:

<issue109>/components/cpp_utils/BLEService.cpp

Find the method called:

executeCreate(BLEServer *pServer)

Your copy should look like:

```
50 /**
51  * @brief Create the service.
52  * Create the service.
53  * @param [in] gatts_if The handle of the GATT server interface.
54  * @return N/A.
55  */
56 void BLEService::executeCreate(BLEServer *pServer) {
57   //ESP_LOGD(LOG_TAG, ">> executeCreate() - Creating service (esp_
58   getUUID(); // Needed for a weird bug fix
59   m_pServer          = pServer;
60   m_semaphoreCreateEvt.take("executeCreate"); // Take the mutex ar
61
62   esp_gatt_srvc_id_t srvc_id;
63   srvc_id.id.inst_id = 0;
64   srvc_id.id.uuid    = *m_uuid.getNative();
65   esp_err_t errRc = ::esp_ble_gatts_create_service(getServer()->ge
66
67   if (errRc != ESP_OK) {
68     ESP_LOGE(LOG_TAG, "esp_ble_gatts_create_service: rc=%d %s", er
69     return;
70   }
71
```

Comment out the highlighted line so that it looks like:

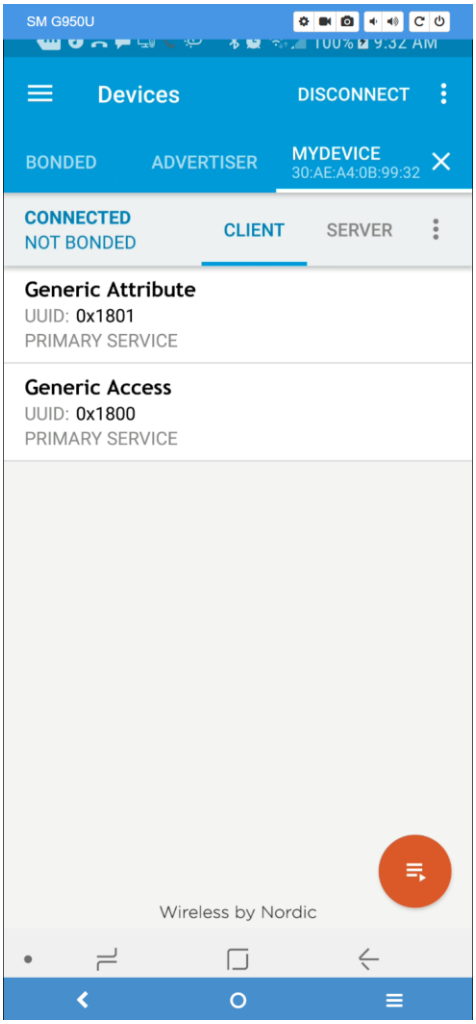
```
50 /**
51  * @brief Create the service.
52  * Create the service.
53  * @param [in] gatts_if The handle of the GATT server interface.
54  * @return N/A.
55  */
56 void BLEService::executeCreate(BLEServer *pServer) {
57   //ESP_LOGD(LOG_TAG, ">> executeCreate() - Creating service (esp_bl
58   //getUUID(); // Needed for a weird bug fix
59   m_pServer          = pServer;
60   m_semaphoreCreateEvt.take("executeCreate"); // Take the mutex and
61
62   esp_gatt_srvc_id_t srvc_id;
63   srvc_id.id.inst_id = 0;
64   srvc_id.id.uuid    = *m_uuid.getNative();
65   esp_err_t errRc = ::esp_ble_gatts_create_service(getServer()->getC
66
67   if (errRc != ESP_OK) {
68     ESP_LOGE(LOG_TAG, "esp_ble_gatts_create_service: rc=%d %s", errR
69     return;
70   }
71
```

Rebuild your application (I just ran "make").

Reflash your ESP32.

Re-run the nRF Connect tests.

Examine the nRF Connect output. Now notice that the service no longer shows up!!



My environment:

$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 17.04
Release: 17.04
Codename: zesty

$ xtensa-esp32-elf-gcc -v
…
gcc version 5.2.0 (crosstool-NG crosstool-ng-1.22.0-61-gab8375a)