

Designed on Ubuntu 22.04 Server

Useful resources

Bluez in C

- <https://people.csail.mit.edu/albert/bluez-intro/c404.html>

Daemons in C

- <https://forums.freebsd.org/threads/sample-daemon-in-c.73059/>

GLib Documentation

- <https://docs.gtk.org/glib/>
-

Notes for research

- Randomized Advertisement

Current Progress

- [x] Bluetooth works
- [x] daemon powers adapter
- [x] not discoverable
- [x] not pairable
- [] **ensure PRIVACY option works in adapter.c (btmgmt current settings)**
- [x] secure connections enabled
- [] br/edr le (remove at kernel level)
- [x] pair once, then never again
- [] Pairing agent
- [x] MAC whitelist
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Packages Needed

- build-essential
- pkg-config
- libdbus-1-dev
- libdbus-glib-1-dev
- libglib2.0-dev - mainloop
- libbluetooth-dev - headers
- bluez - backend daemon
- bluez-tools - debugging ONLY !!! REMOVE LATER

- cmake
- git
- btmon - protocol trace
- tcpdump

Yocto Depends

- DEPENDS += "dbus-glib"
-

Structure (GPT Suggestion)

uri-bt/

```
├── CMakeLists.txt
└── src/
    ├── main.c
    ├── adapter.c
    ├── adapter.h
    ├── whitelist.c
    ├── whitelist.h
    ├── gatt.c
    ├── gatt.h
    └── dbus.c
        └── dbus.h
    └── config/
        └── bt.conf
    └── init/
        └── uri-bt.init
    └── selinux/
        └── uri_bt.te
└── README.md
```

Requirements

adapter.c

- Find hci0
- Power on
- Set privacy
- Disable discoverability

whitelist.c

- Enforce whitelist

gatt.c

- Expose minimal service
- Essentially the API

Event loop

- mainloop
- No Threads

BlueZ Config

Init Script

SELinux Stub

Map To Yocto

DBus type	You must pass
STRING	<code>const char *address</code>
OBJECT_PATH	<code>const char * address</code>
BOOLEAN	<code>dbus_bool_t *</code>
BYTE	<code>uint8_t *</code>