



BB-Config



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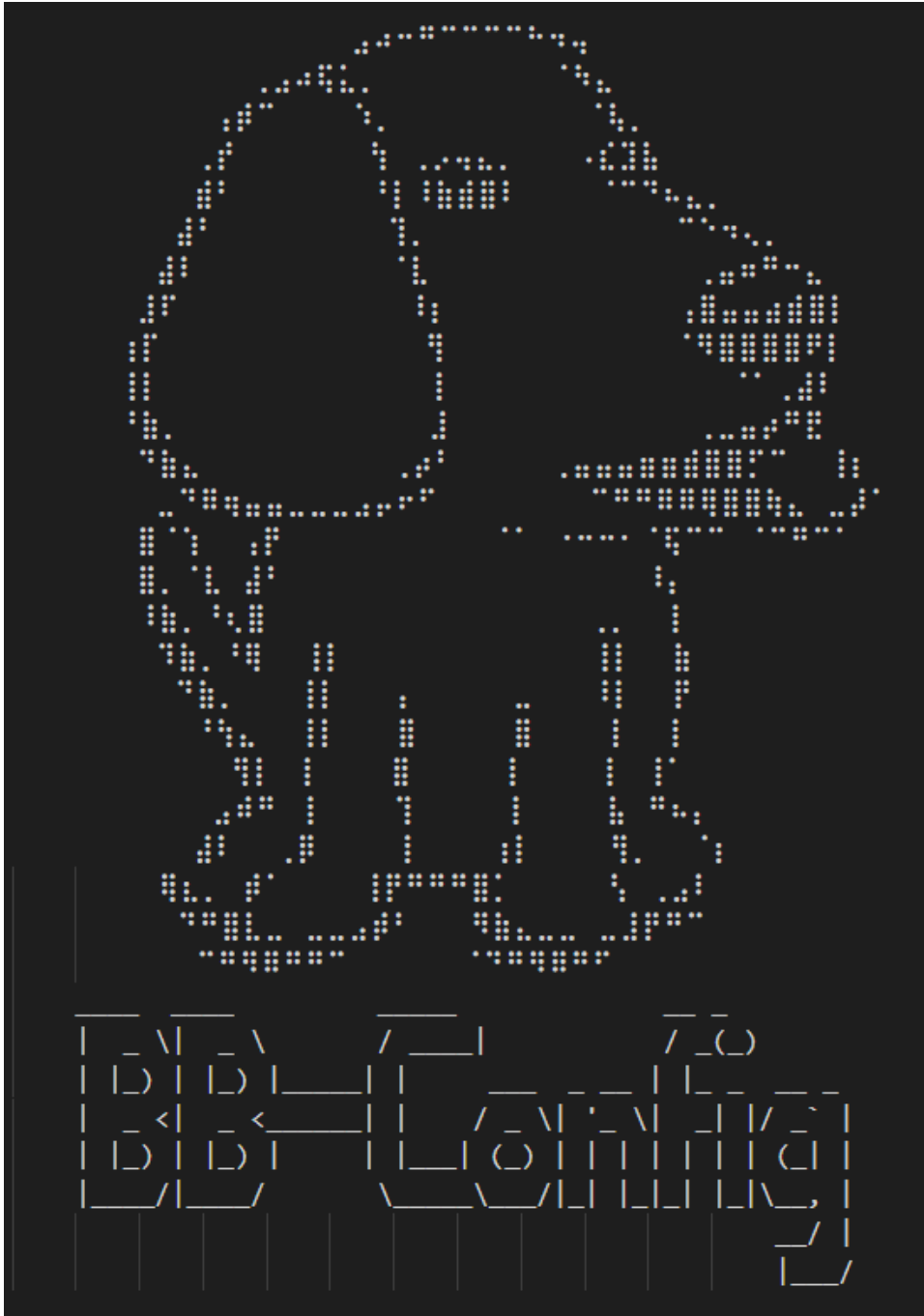
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Chapter 1

BB-Config Detail

Configure your beagle devices easily.

[Github](#)



1.1 What is BB-Config

BB-Config is software that makes the most common low-level configuration changes of beagle devices easily and provides a terminal UI.

BB-Config is using [FTXUI](#) (C++ Functional Terminal User Interface) which provides a simple and elegant looking UI.

Chapter 2

Build from Source

2.1 Dependencies

- g++
- cmake
- glib-2.0
- libnm

2.2 Build

```
git clone https://git.beagleboard.org/gsoc/bb-config
cd bb-config
mkdir build
cd build
cmake ..
make -j$(nproc)
```

2.3 Install

```
sudo make install
```

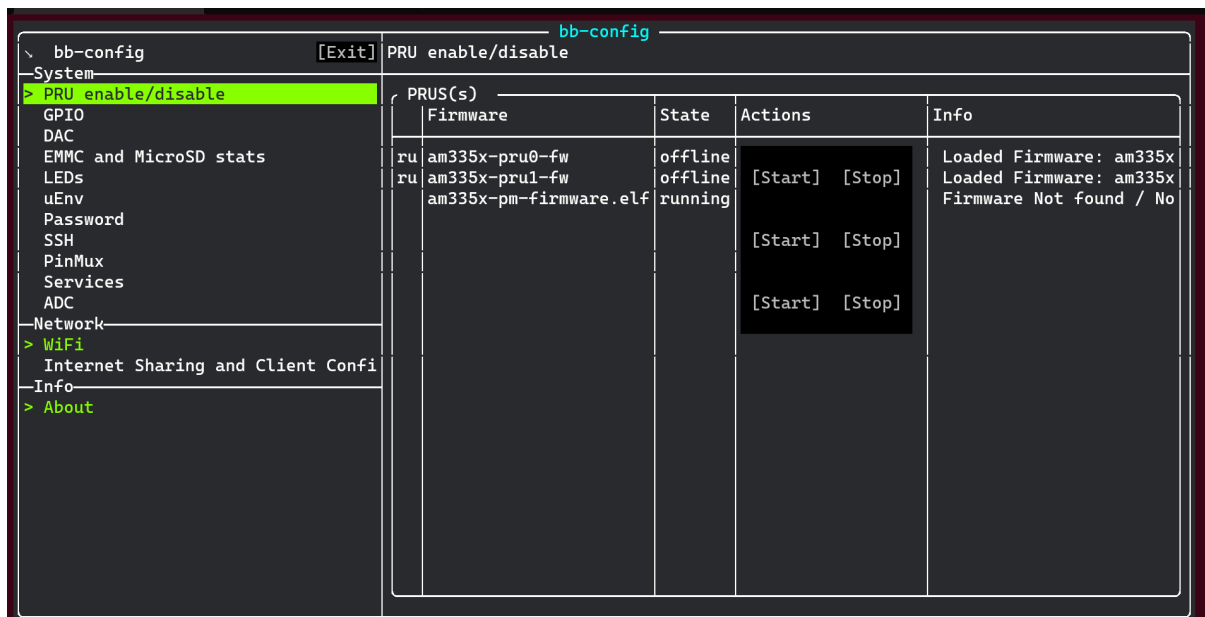

Chapter 3

Features

3.1 BB-Config v1.x

3.1.1 PRU Enable/Disable

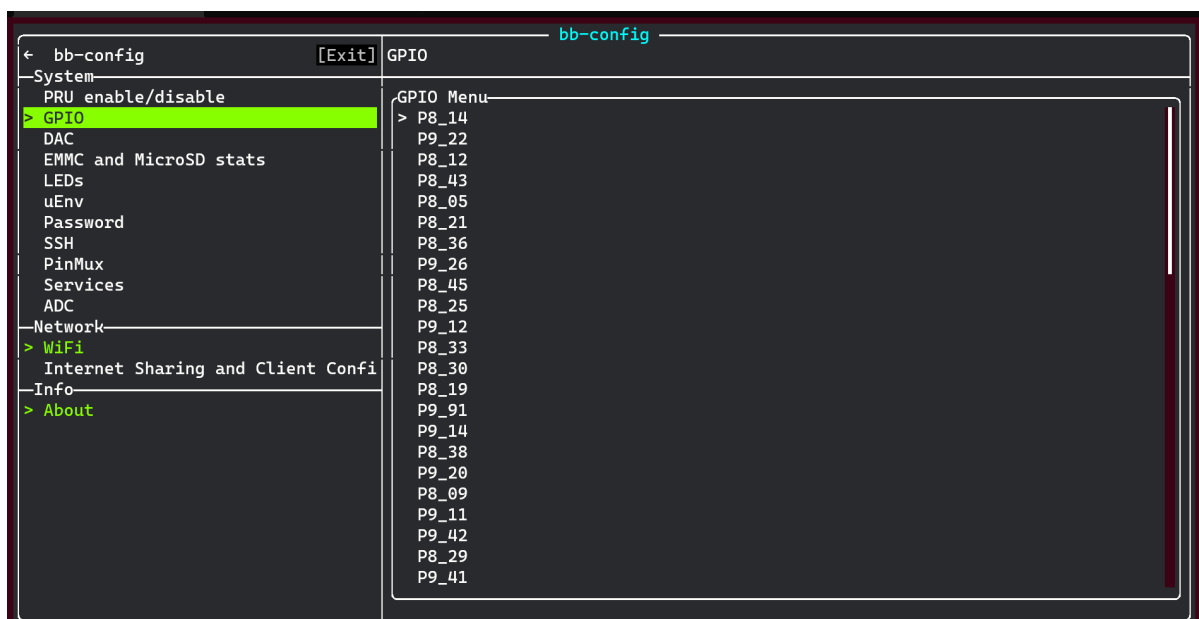
- Enable/Disable PRU



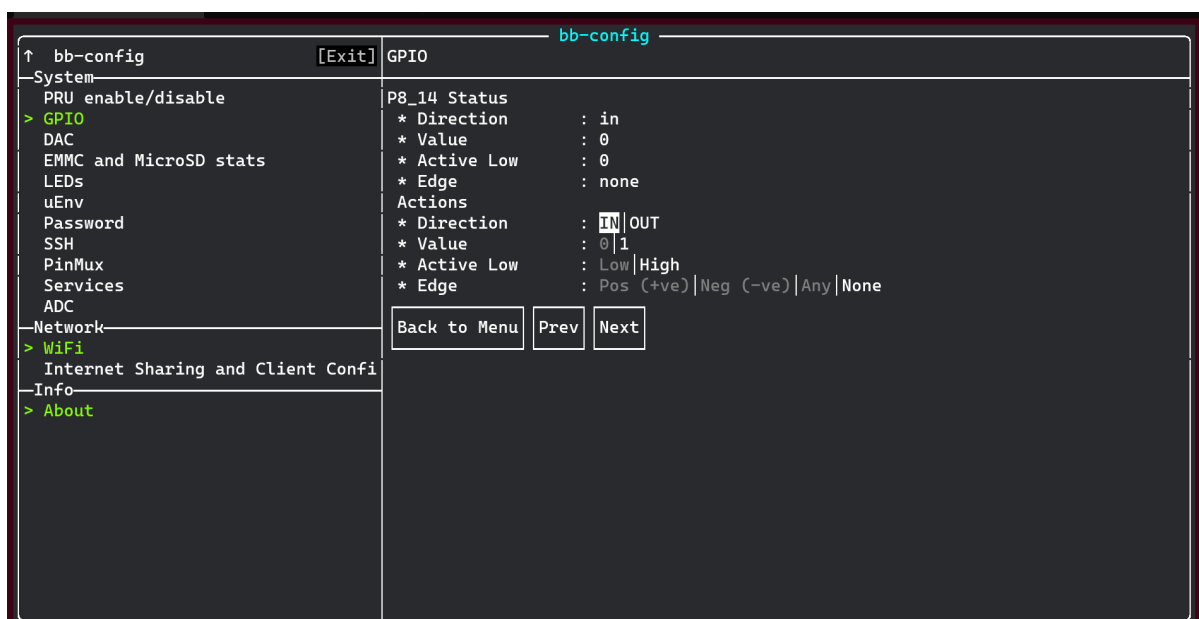
3.1.2 GPIO

- Turn On/Off gpio

GPIO Menu



GPIO Setting



3.1.3 EMMC and MicroSD Stats

- Storage stats & grow partition

```

bb-config [Exit] EMMC and MicroSD stats
├─ System
│   ├── PRU enable/disable
│   ├── GPIO
│   ├── DAC
│   └─ > EMMC and MicroSD stats
│       ├── LEDs
│       ├── uEnv
│       ├── Password
│       ├── SSH
│       ├── PinMux
│       ├── Services
│       └─ ADC
├─ Network
│   └─ > WiFi
│       ├── Internet Sharing and Client Confi
│       └─ Info
└─ Info
    └─ > About

```

Name	Free	Capacity	Start	Filled
/dev/mmcblk1boot0	213.37 MB	213.37 MB	213.37 MB	
/dev/mmcblk1	213.37 MB	213.37 MB	213.37 MB	
/dev/mmcblk1boot1	213.37 MB	213.37 MB	213.37 MB	
/dev/mmcblk0	213.37 MB	213.37 MB	213.37 MB	
/home/debian	27004.53 MB	29277.34 MB	25764.68 MB	█

Grow Partition Show (approx) size in:

3.1.4 LEDs

- Config board build in LEDs

```

bb-config [Exit] LEDs
├─ System
│   ├── PRU enable/disable
│   ├── GPIO
│   ├── DAC
│   ├── EMMC and MicroSD stats
│   └─ > LEDs
│       ├── uEnv
│       ├── Password
│       ├── SSH
│       ├── PinMux
│       ├── Services
│       └─ ADC
├─ Network
│   └─ > WiFi
│       ├── Internet Sharing and Client Confi
│       └─ Info
└─ Info
    └─ > About

```

Select a LED:

- beaglebone:green:usr0
- beaglebone:green:usr1
- beaglebone:green:usr2
- beaglebone:green:usr3
- mmc0::
- mmc1::

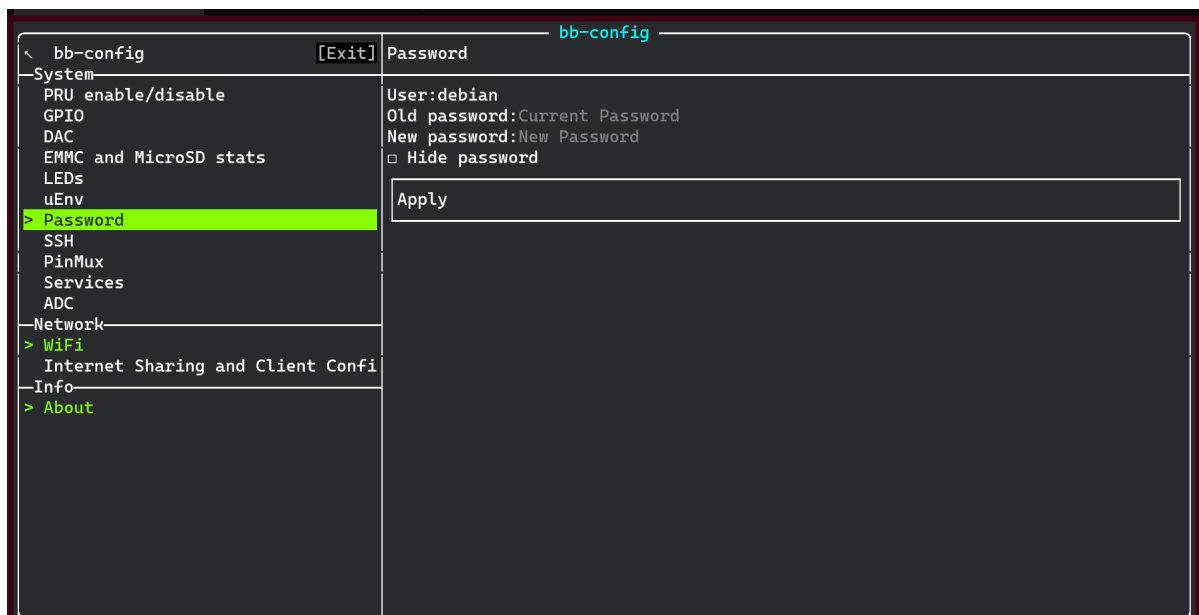
Name : beaglebone:green:usr0
 Brightness: 0
 Trigger : heartbeat

- none
- usb-gadget
- usb-host
- rfkill-any
- rfkill-none
- kbd-scrolllock
- kbd-numlock
- kbd-capslock
- kbd-kanalock
- kbd-shiftlock

Toggle

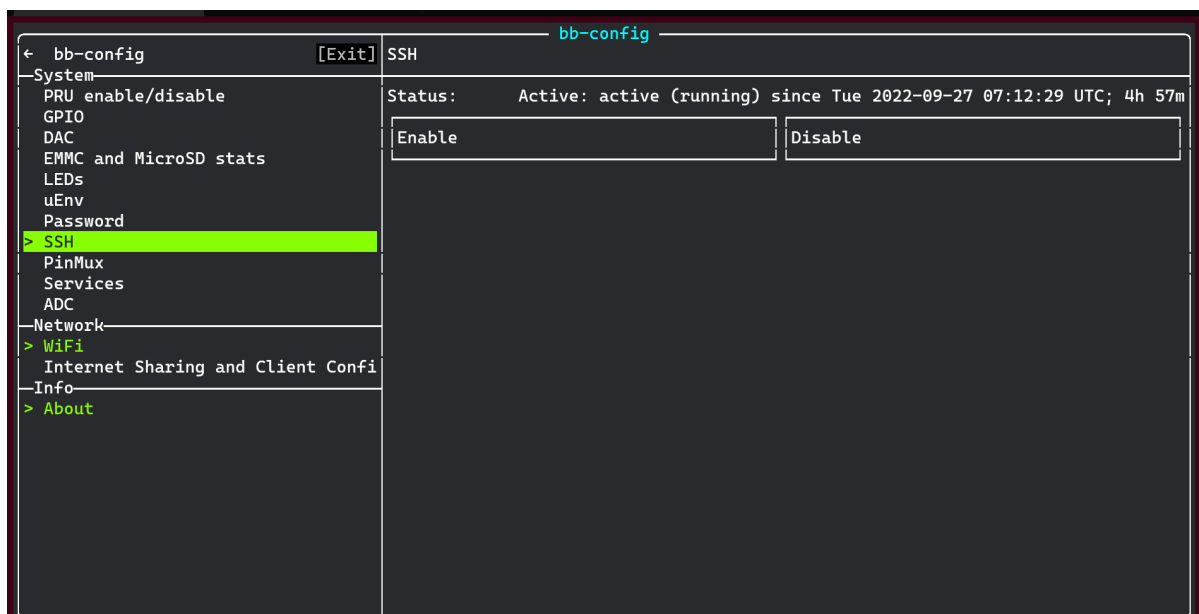
3.1.5 Password

- Change users password



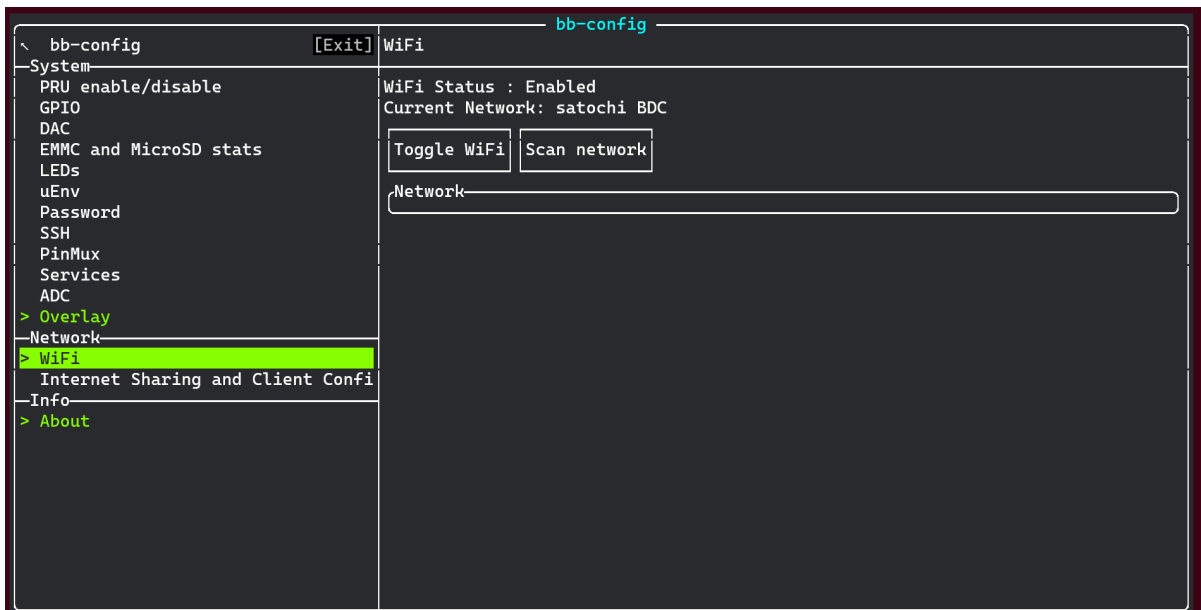
3.1.6 SSH

- Enable/Disable SSH

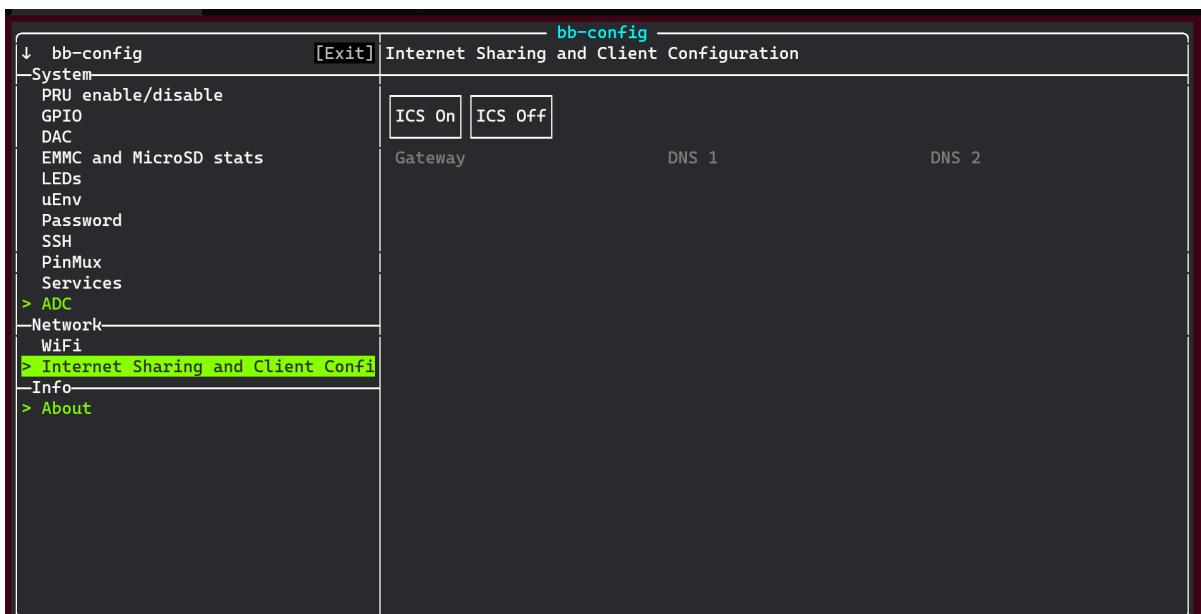


3.1.7 WiFi

- Connect to Wi-Fi

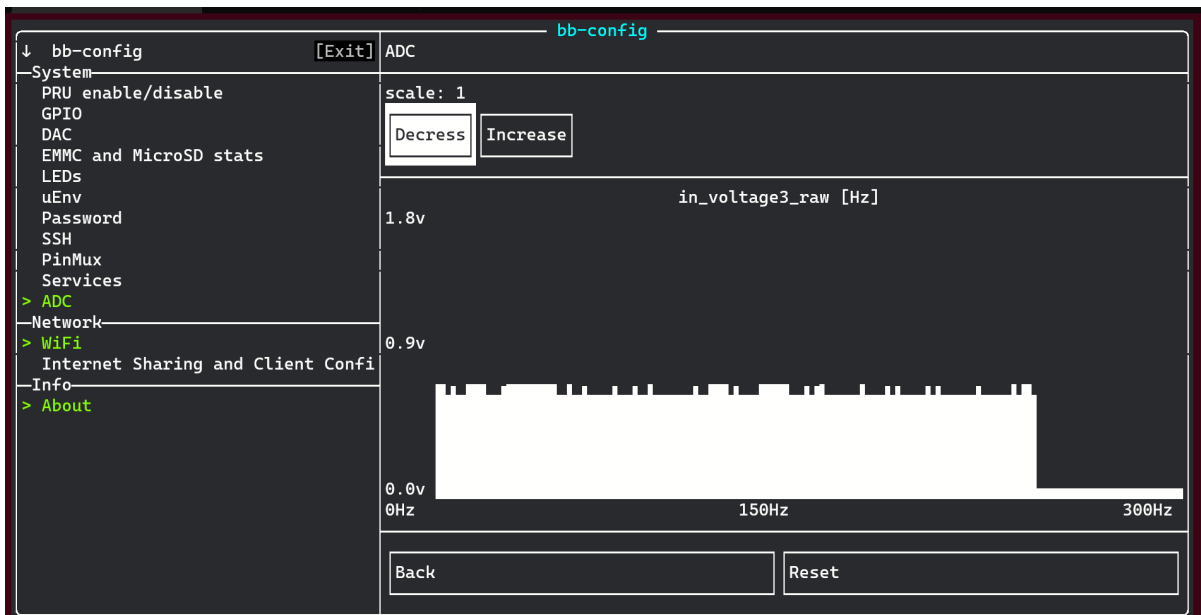


3.1.8 Internet Sharing and Client Config



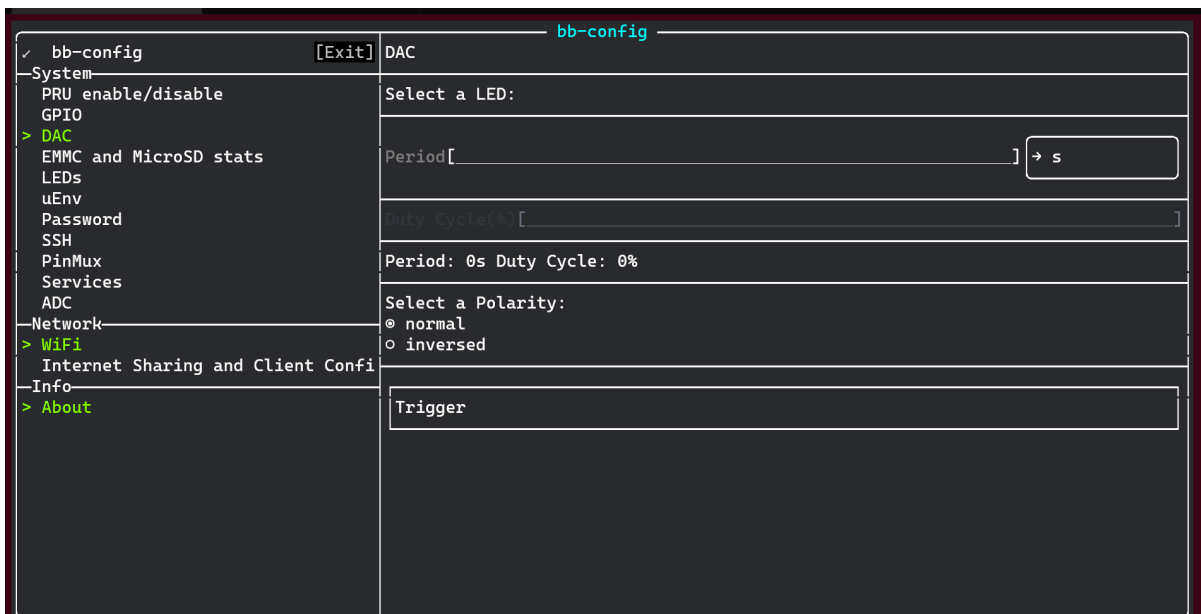
- Note: You'll have to configure your host. Following is an example script:

```
echo 1 > /proc/sys/net/ipv4/ip_forward
iptables --table nat --append POSTROUTING --out-interface wlp4s0 -j MASQUERADE
iptables --append FORWARD --in-interface wlp4s0 -j ACCEPT
```

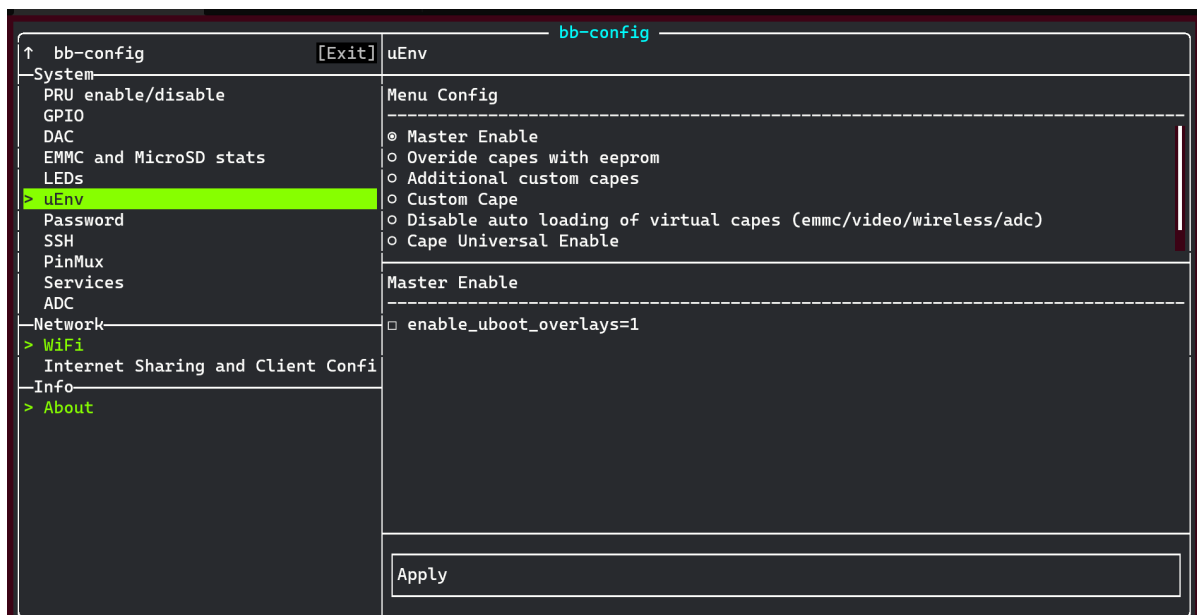
3.2.2 DAC (PWM)

- Generate PWM waveform



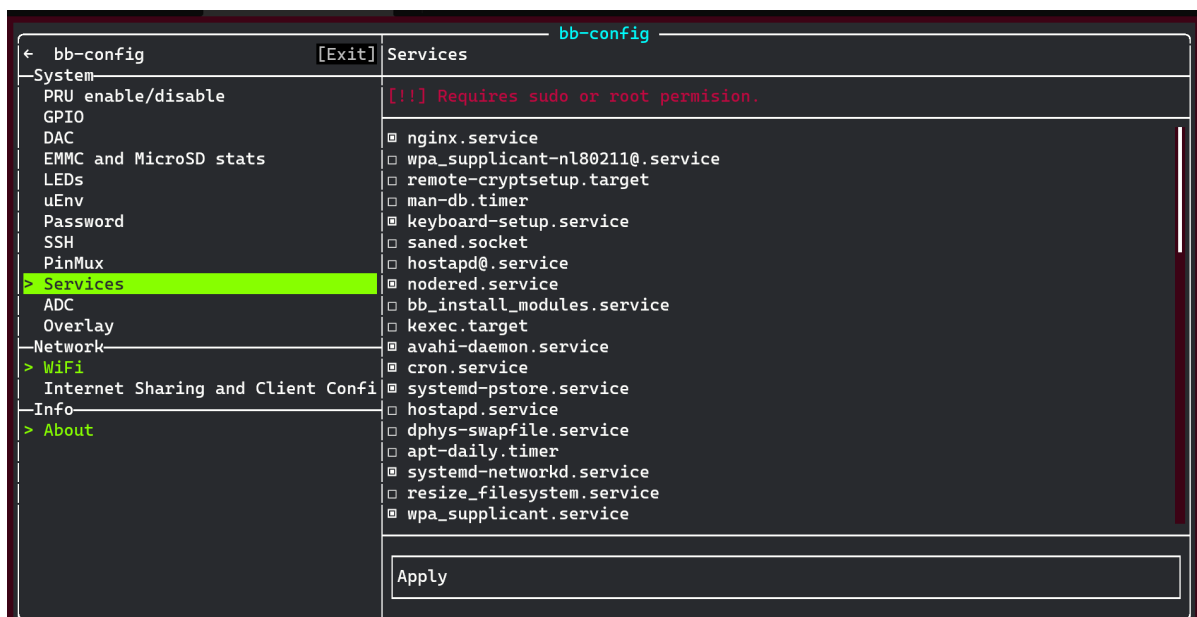
3.2.3 uEnv

- Enable/Disable boot configuration



3.2.4 services

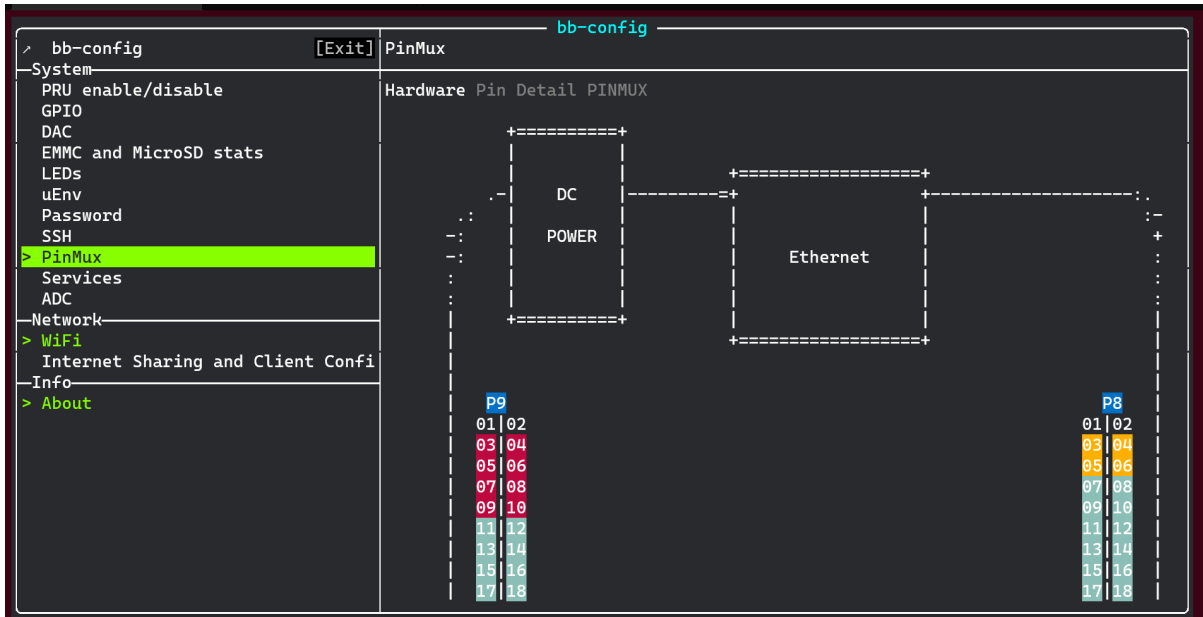
- Enable/Disable services startup at boot



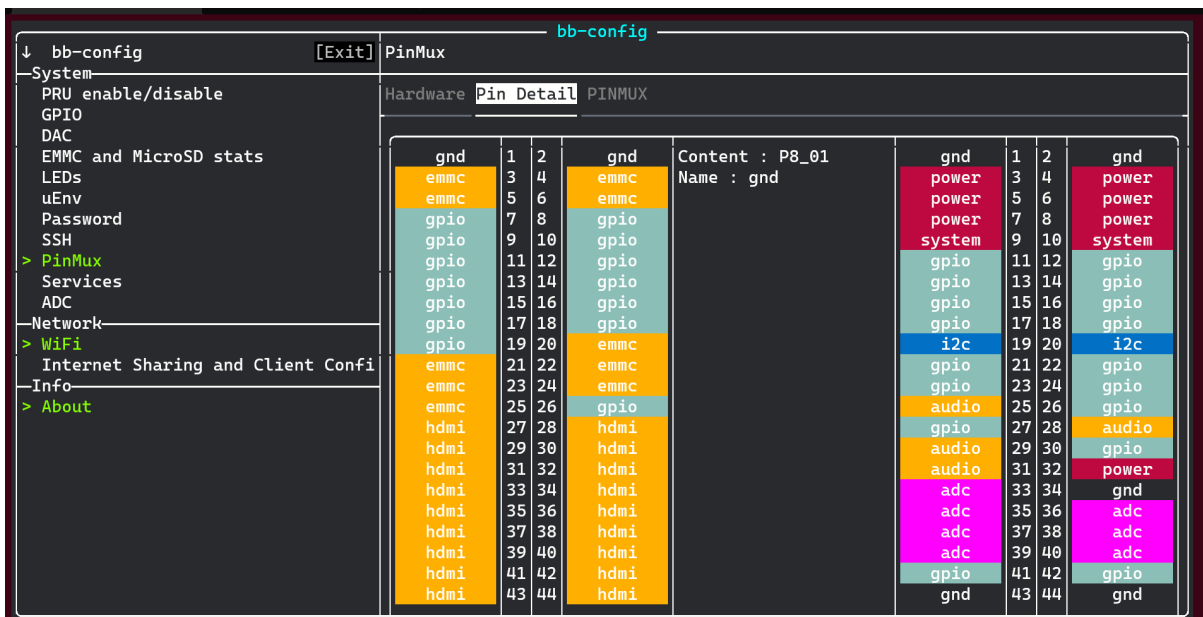
3.2.5 PINMUX

- Display PIN I/O detail
- Config PINMUX

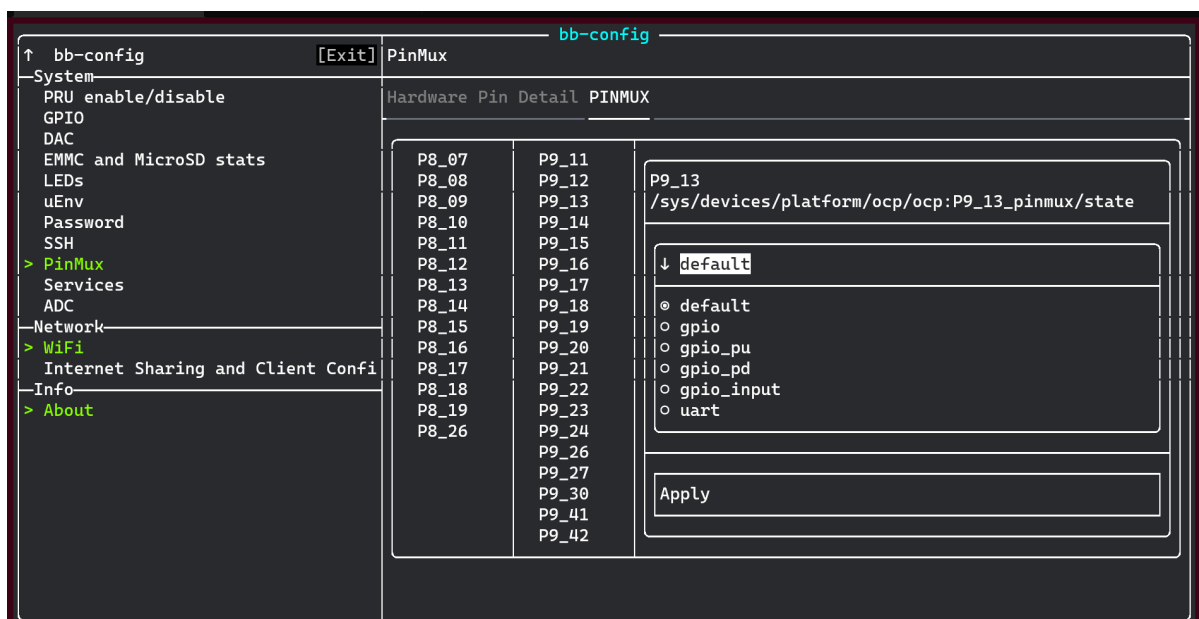
Hardware Display



Pin Table References

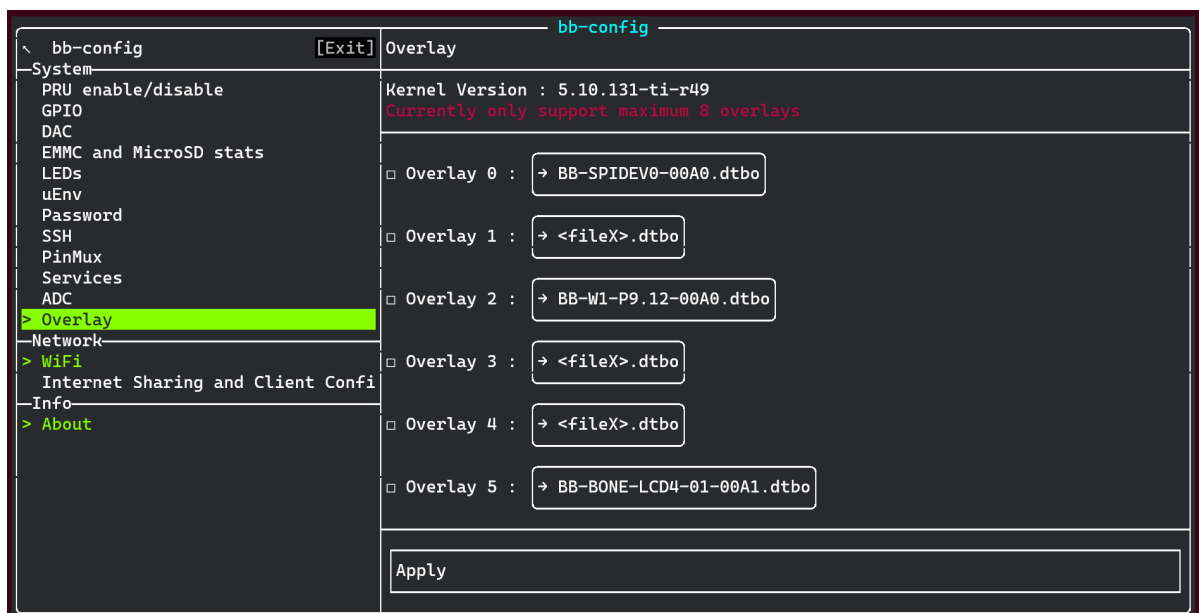


Pin Config



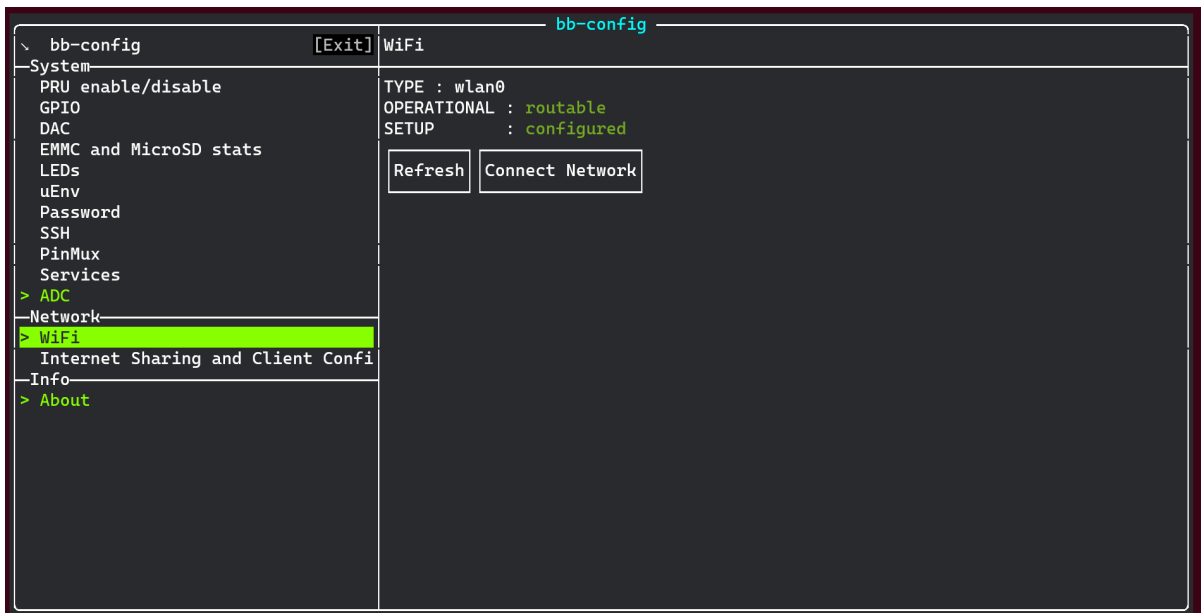
3.2.6 Overlay (dts)

- Enable/Disable Device Tree Overlay in Boot option
- Select dtbo file and automate update in uEnv.txt



3.2.7 WiFi (D-Bus)

- Connect to WiFi with wpa_supplicant
- Support for Debian 11



Chapter 4

Version

4.1 GSOC@21 BB-Config v1.x

- Name: Shreyas Atre
- Mentors: Arthur Sonzogni, Abhishek Kumar, Deepak Khatri.
- Organization: BeagleBoard.org
- Code: <https://github.com/SAtacker/beagle-config>
- Project Page: <https://summerofcode.withgoogle.com/projects/#6718016412188672>
- Progress Log: <https://satacker.github.io/gsoc-log/>
- Kanban: <https://github.com/SAtacker/beagle-config/projects/1>
- Initial Video: <https://youtu.be/vFUWCzqE6xl>

4.2 GSOC@22 BB-Config v2.x

- Name: Seak Jian De
- Mentors: Shreyas Atre, Vedant Paranjape, Vaishnav Achath.
- Organization: BeagleBoard.org
- Code: <https://git.beagleboard.org/gsoc/bb-config>
- Project Page: <https://summerofcode.withgoogle.com/programs/2022/projects/2DbiYPIY>
- Progress Log: <https://forum.beagleboard.org/t/weekly-progress-report-bb-config-improvements-gpio-benchmark/32357/2>
- Initial Video: https://youtu.be/V_Euk5uWY1o