Mraa Usage

MRAA Introduction

Eclipse Mraa (Libmraa) is a C/C++ library with Java, Python, and JavaScript bindings for connecting I/O pins and buses on a variety of IoT and edge platforms, with a well-structured API and port names/numbers that match the boards on which they are located.

Install MRAA

```
sudo apt-get update -y
sudo apt-get install libmraa2 libmraa-dev libmraa-java python3-mraa mraa-tools -y
```

MRAA Command Line Tools

GPIO

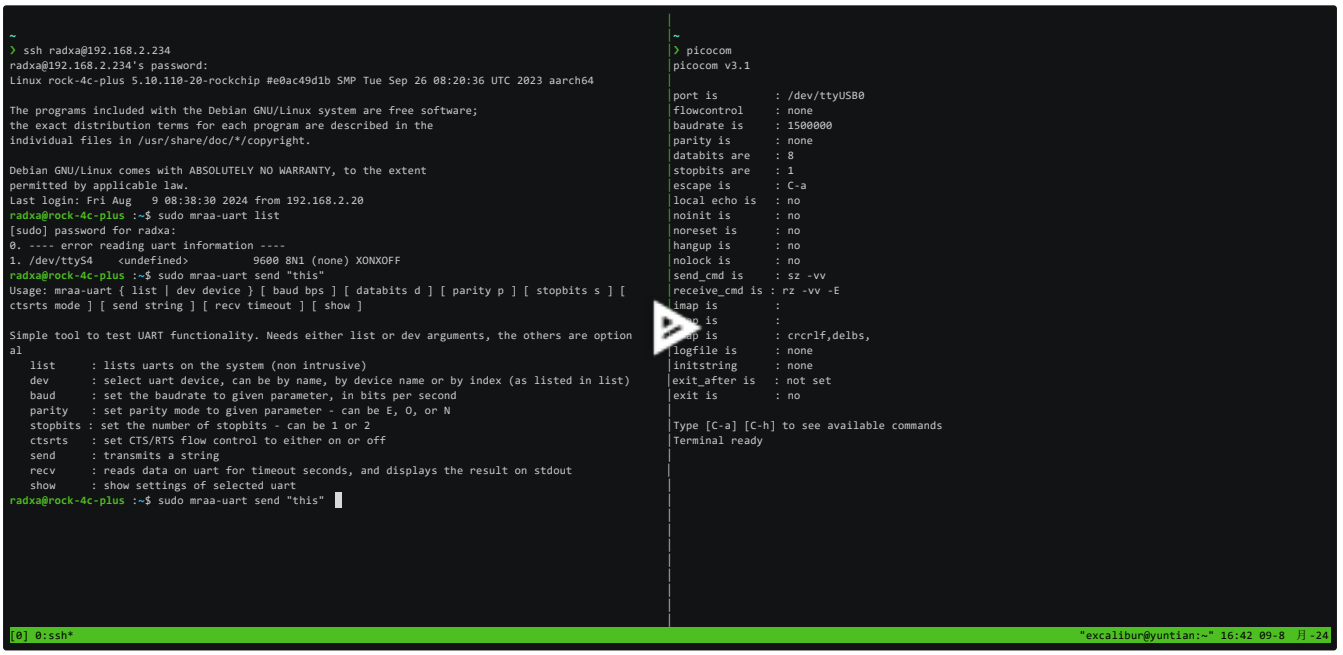
- mraa-gpio list: List all available pins
- mraa-gpio get pin: Get Pin Status
- mraa-gpio set pin level: Set Pin Status
- mraa-gpio version: Get MRAA Version

I2C

- mraa-i2c list: List available I2C buses
- mraa-i2c version: Get mraa version and board name
- mraa-i2c detect bus: List detected devices on specified bus
- mraa-i2c get bus device reg: Get value from specified device register
- mraa-i2c set bus device reg value: Set specified device register to value

UART

- mraa-uart list: Lists UARTs on the system
- mraa-uart dev dev_num baud customized_baud send str: send str to port dev_num
- mraa-uart dev dev_num baud customized_baud recv 1000: receive 1000 bytes from port dev_num



`mraa-uart` *usage example*

Sample Code

GPIO

C Python

▸ blink.c

Usage:

- Connect the led signal pin to PIN3, VCC to the board VCC, GND to the board GND
- Test

```
gcc blink.c -lmraa -o blink && sudo . /blink
```

I2C

C Python

led_i2c_blink.c

Usage:

- Turn on Overlay of I2C2 and reboot.
- Wiring: SDA <--> SDA, SCL <--> SCL, GDN <--> GND, VCC <--> VCC
- Open the terminal and enter the following command to test

```
gcc led_i2c_blink.c -lmraa -o led_i2c_blink && sudo ./led_i2c_blink
```

If the test is successful, the I2C Led will have a running light effect.

PWM

C Python

led_pwm_fade_out.c

Usage:

- Turn on the PWM Overlay of a certain PIN and restart, take the PWM of PIN28 as an example.
- Connect the signal pin of the led to the PIN28 pin, VCC to the VCC of the board, and GDN to the GND of the board.
- Test

```
gcc led_pwm_fade_out.c -lmraa -o led_pwm_fade_out && sudo ./led_pwm_fade_out 28
```

SPI

C Python

spi_test.c

Usage:

- Turn on spi0 i.e. spidev0.0's Overlay and reboot!
- Test

Open a terminal and enter the following commands to test

```
gcc spi_test.c -o spi_test && sudo ./spi_test
```

If the test is successful, the terminal will output "0xaa".

UART

C Python

snd.c

recv.c

Usage:

- Open the overlay of two UARTs, take uart4 and uart6 as an example, i.e. /dev/ttyS4 and /dev/ttyS6.

- Cross-wire the TX and RX pins of the two UARTs.
- Test

Open two terminals and enter the following commands to test respectively.

```
gcc recv.c -lmraa -o recv && sudo ./recv 6 # /dev/ttyS6
```

```
gcc snd.c -lmraa -o  snd && sudo ./snd 4 "hello, this is test"  # /dev/ttyS4
```

If the test is successful, uart6 receives the cyclic message "hello, this is test" from uart4.

More

- Mraa API reference
- GitHub

Report Issue

Edit this page