Check GPIO/PWM Driver at /sys/class/pwm

https://forums.developer.nvidia.com/t/how-do-i-use-pwm-on-jetson-nano/72595/5

Step 1. Check if pwm driver is already installed in your OS kernel

$ls *sys/class/pwm*

```
harry-nano@harry-desktop-nano: /sys/class
harry-nano@harry-desktop-nano:/sys/class$ ls /sys/class/pwm
pwmchip0  pwmchip4
harry-nano@harry-desktop-nano:/sys/class$
```

So in response, we have:
pwmchip0 pwmchip4

Step 2. Check the number of channels for each pwm

First go to pwm folder, then from there to pwmchip0, then do

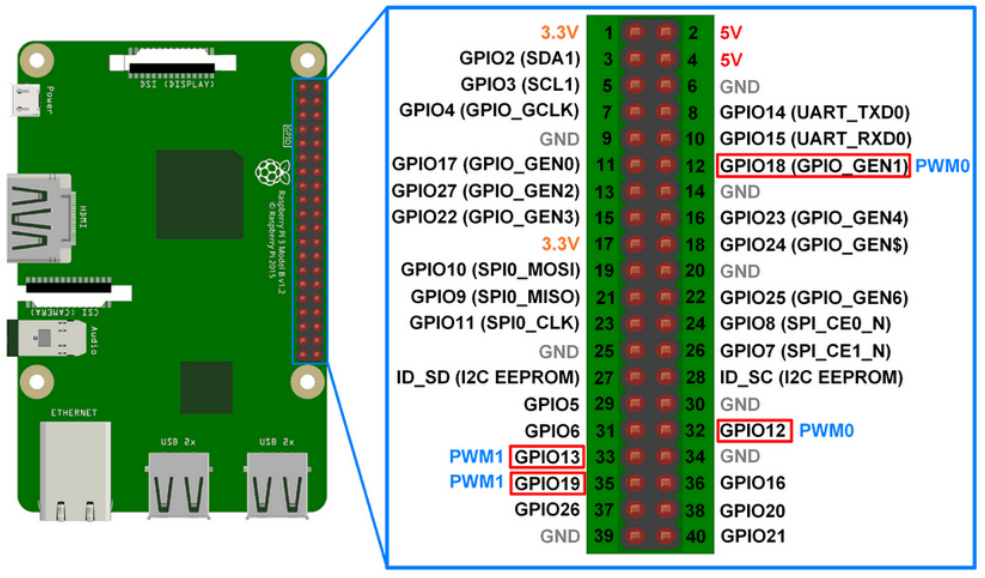
$cat npwm //to find number of channels

```
harry-nano@harry-desktop-nano: /sys/class/pwm/pwmchip0
pwmchip0  pwmchip4
harry-nano@harry-desktop-nano:/sys/class/pwm$ cd pwmchip0
harry-nano@harry-desktop-nano:/sys/class/pwm/pwmchip0$ cat npwm
4
```

If you do the same for pwmchip4, you will find 1 channel. So the total pwm channel is 5.

Step 3. Find the mapping to the connector pins, use the pi pin assignment as a reference (see below)

Pi Pin layout



Jetson Nano J41 Header Pinout for GPIO/PWM

https://www.jetsonhacks.com/nvidia-jetson-nano-j41-header-pinout/

Note: I2C and UART pins are connected to hardware and should not be reassigned. By default, all other pins (except power) are assigned as GPIO. Pins labeled with other functions are recommended functions if using a different device tree.

Use pin 32 for PWM

	GND	25	26	SPI_1_CS1	gpio20
	I2C_1_SDA *I2C Bus 0*	27	28	I2C_1_SCL *I2C Bus 0*	
gpio149	CAM_AF_EN	29	30	GND	
gpio200	GPIO_PZ0	31	32	LCD_BL_PWM	gpio168
gpio38	GPIO_PE6	33	34	GND	
gpio76	I2S_4_LRCK	35	36	UART_2_CTS	gpio51
gpio12	SPI_2_MOSI	37	38	I2S_4_SDIN	gpio77
	GND	39	40	I2S_4_SDOUT	gpio78

pin 12 for gpio78

Sysfs GPIO	Name	Pin	Pin	Name	Sysfs GPIO
	3.3 VDC *Power*	1	2	5.0 VDC *Power*	
	I2C_2_SDA *I2C Bus 1*	3	4	5.0 VDC *Power*	
	I2C_2_SCL *I2C Bus 1*	5	6	GND	
gpio216	AUDIO_MCLK	7	8	UART_2_TX */dev/ttyTHS1*	
	GND	9	10	UART_2_RX */dev/ttyTHS1*	
gpio50	UART_2_RTS	11	12	I2S_4_SCLK	gpio79
gpio14	SPI_2_SCK	13	14	GND	
gpio194	LCD_TE	15	16	SPI_2_CS1	gpio232
	3.3 VDC *Power*	17	18	SPI_2_CS0	gpio15
gpio16	SPI_1_MOSI	19	20	GND	
gpio17	SPI_1_MISO	21	22	SPI_2_MISO	gpio13
gpio18	SPI_1_SCK	23	24	SPI_1_CS0	gpio19
	GND	25	26	SPI_1_CS1	gpio20

pin 12 for gpio79

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Configuration of Pins with jetson-io.py

Step 1. Fix bugs from the distribution

$sudo find /opt/nvidia/jetson-io/ -mindepth 1 -maxdepth 1 -type d -exec touch {}/__init__.py \;

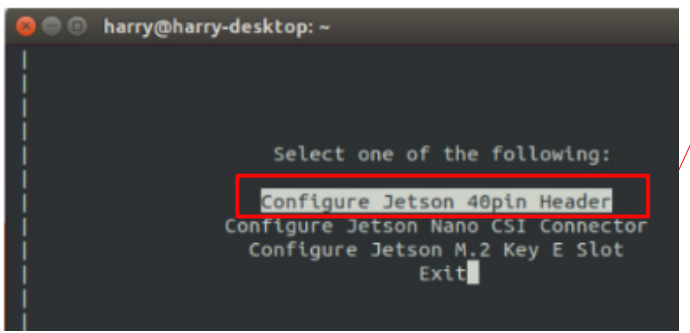
$sudo /opt/nvidia/jetson-io/config-by-pin.py -p 5

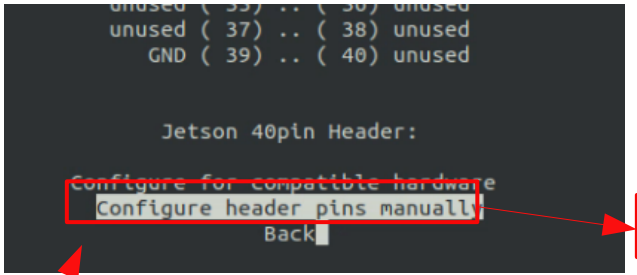
```
harry@harry-desktop:~$ sudo /opt/nvidia/jetson-io/config-by-pin.py -p 5
Traceback (most recent call last):
  File "/opt/nvidia/jetson-io/config-by-pin.py", line 84, in <module>
    main()
  File "/opt/nvidia/jetson-io/config-by-pin.py", line 39, in main
    jetson = board.Board()
  File "/opt/nvidia/jetson-io/Jetson/board.py", line 229, in __init__
    self.dtb = _board_get_dtb(self.compat, self.model, dtbdir)
  File "/opt/nvidia/jetson-io/Jetson/board.py", line 114, in _board_get_dtb
    raise RuntimeError("No DTB found for %s!" % model)
RuntimeError: No DTB found for NVIDIA Jetson Nano Developer Kit!
```

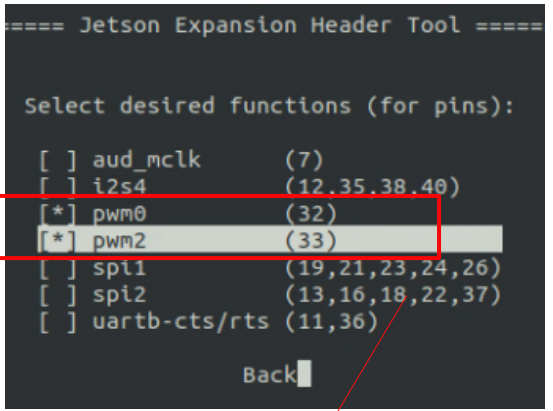
$sudo mkdir -p /boot/dtb
$ ls /boot/*.dtb | xargs -I{} sudo ln -s {} /boot/dtb/

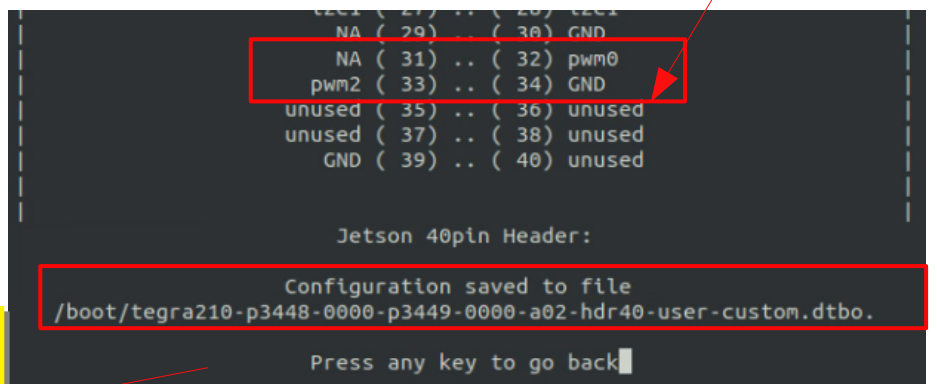
Step 2. Run jetson-io.py to configure pins

$sudo /opt/nvidia/jetson-io/jetson-io.py









Be sure to choose save and reboot to reboot the system