

Setting up the Raspberry Pi Zero 2 W to use SSH

Hostname: rpiw2,

Username: Pi,

Password: ????

ssh pi@rpiw2

SSID ???

SSID Password ???

Set up a simple web browser to download samples:-

<http://rpiw2/>

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The manual seems to suggest it is possible to get it to stream selected readings at a regular time interval. It should be possible to set up the Raspberry Pi Zero to capture these and log to a file.

This file can be downloaded to a PC , using SCP or a simple web server.

TUF-2000M User Manual

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M51	Window to setup the time of scheduled output function (data logger, or Thermo-printer). This includes start time, time interval and how many times of output. When a number great than 8000 entered for the times of output, It means the output will be keeping always. The minimum time interval is 1 second and the maximum is 24 hours.
M52	Data logging direction control. (1) If 'Send to RS485' is selected, all the data produced by the data logger will be transmitted out through the RS-232/RS485 interface (2) If 'To the internal serial BUS is selected, the data will be transmitted to the internal serial bus which allows a thermal printer, or a 4-20mA analog output module, to be connected to it.

Pragmatic logging commands

Once set up these commands can possibly be used:

```
sudo shutdown
```

#== the RS485 device could be /dev/ttyACM0 or /dev/ttyUSB0

```
cat /dev/ttyACM0
```

```
mkdir www
```

```
date >> ~/www/capture.csv
```

```
cat /dev/ttyACM0 >> ~/www/capture.csv
```

Use STTY to check device:

```
stty -help
```

```
stty -F /dev/ttyACM0 -a
```

```
stty -F /dev/ttyACM0 speed 9600
```

use this command to capture

```
nohup cat /dev/ttyACM0 >> ~/www/capture.csv &
```

```
tail -f ~/www/capture.csv
```

```
sudo busybox httpd -p 0.0.0.0:80 -h /home/pi/www
```

```
http://rpiw2/capture.csv
```

in Windows command Prompt get the file using scp.

```
scp pi@rpiw2:~/www/capture.csv
```

#for the XY-MD01 MODBUS , send AUTO to get it to stream

```
echo 'AUTO' > /dev/ttyACM0
```

```
sleep 1
```

```
cat /dev/ttyACM0
```

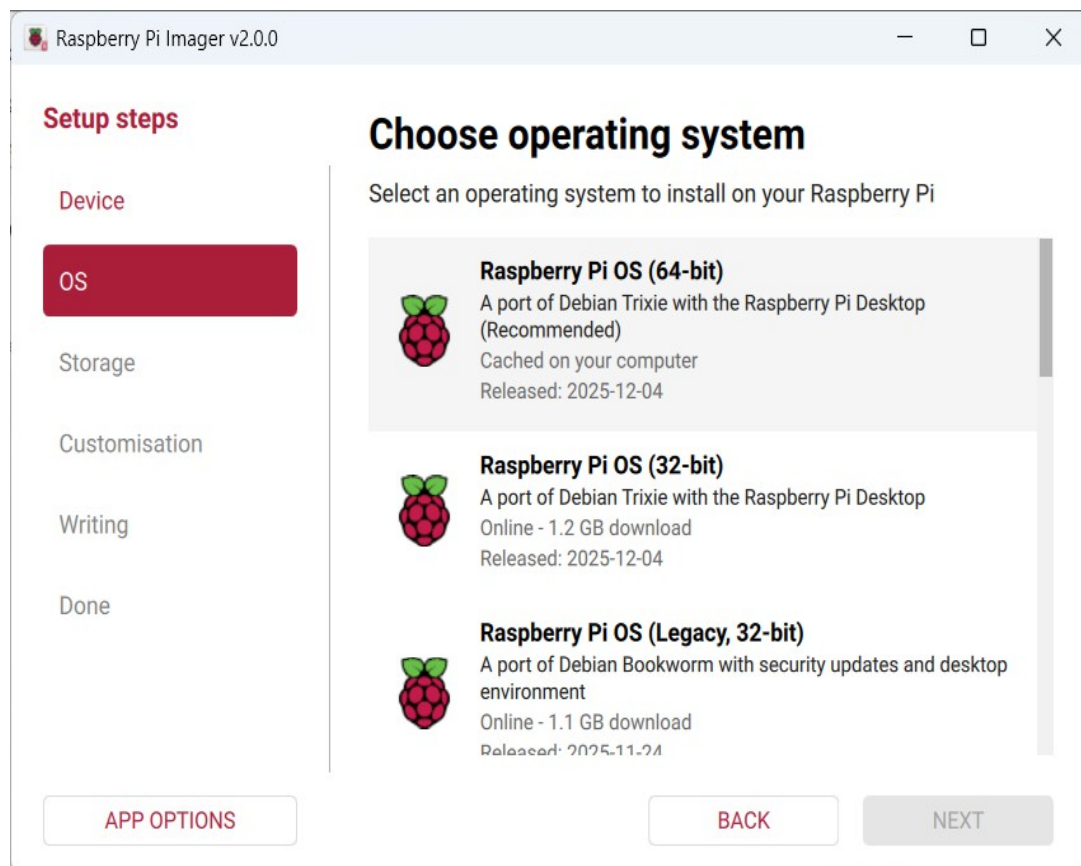
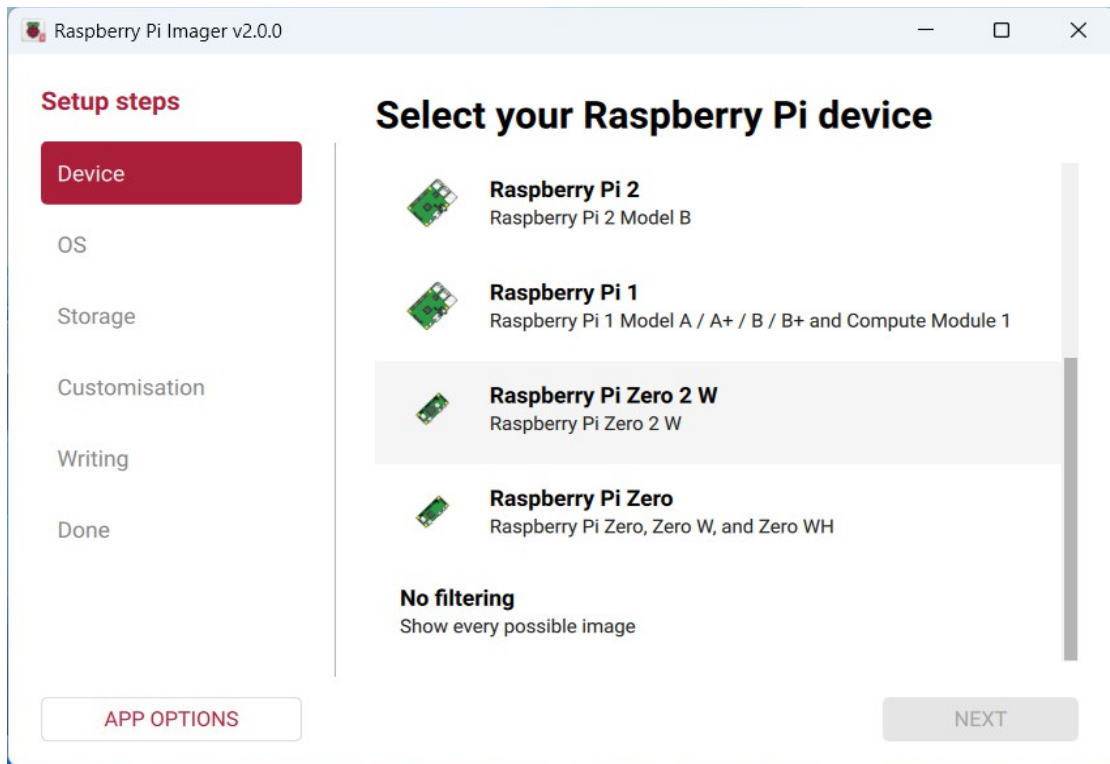
```
echo 'STOP' > /dev/ttyACM0
```

```
cat /dev/ttyACM0
```

Setting up the Raspberry Pi Zero 2 W

Download the imager from <https://www.raspberrypi.com/software/>

and open it. Select Raspberry Pi Zero 2W , check the Pi Zero to see what you have.



Might as well install the recommended version.

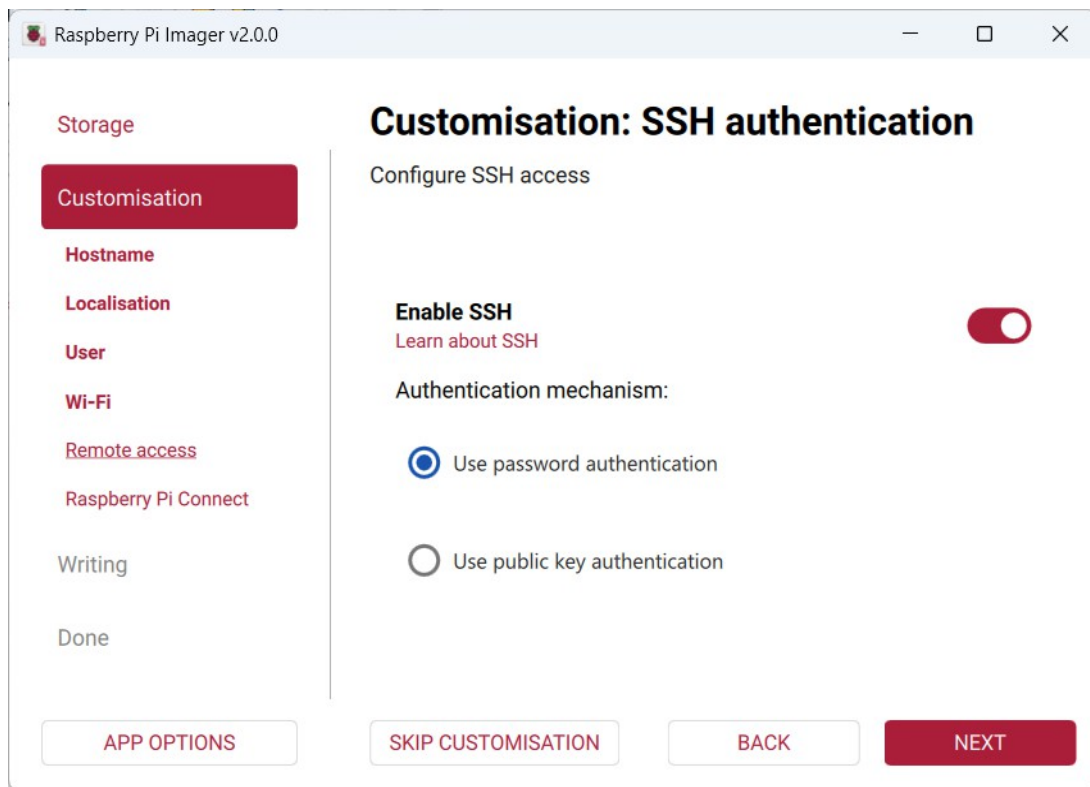
Plug in MicroSD card to be used. The imager should list one device to write to.

The screenshot shows the 'Customisation: Choose hostname' screen in the Raspberry Pi Imager v2.0.0 application. On the left, a sidebar lists various customisation options: Device, OS, Storage, Customisation (highlighted), Hostname, Localisation, User, Wi-Fi, Remote access, and Raspberry Pi Connect. The main area has a title 'Customisation: Choose hostname' and a text input field labeled 'Enter your hostname' with the value 'rpiw2'. Below the input field, a note states: 'A hostname is a unique name that identifies your Raspberry Pi on the network. It should contain only letters, numbers, and hyphens.' At the bottom, there are four buttons: 'APP OPTIONS', 'SKIP CUSTOMISATION', 'BACK', and 'NEXT'.

Set up the WiFi SSID and password - IMPORTANT

The screenshot shows the 'Customisation: Choose Wi-Fi' screen in the Raspberry Pi Imager v2.0.0 application. The sidebar on the left is the same as the previous screen, but 'Wi-Fi' is now highlighted. The main area has a title 'Customisation: Choose Wi-Fi' and two buttons: 'SECURE NETWORK' (highlighted) and 'OPEN NETWORK'. Below these are three input fields: 'SSID:' with the value 'WiFe', 'Password:' with the placeholder 'Network password', and 'Confirm password:' with the placeholder 'Re-enter password'. A red error message 'Enter a password' is visible below the password fields. At the bottom, there is a checkbox labeled 'Hidden SSID' which is unchecked. The bottom buttons are 'APP OPTIONS', 'SKIP CUSTOMISATION', 'BACK', and 'NEXT'.

Important: Enable SSH



Raspberry Pi Imager v2.0.0

Storage

Customisation

Hostname

Localisation

User

Wi-Fi

Remote access

Raspberry Pi Connect

Writing

Done

Customisation: SSH authentication

Configure SSH access

Enable SSH ☒

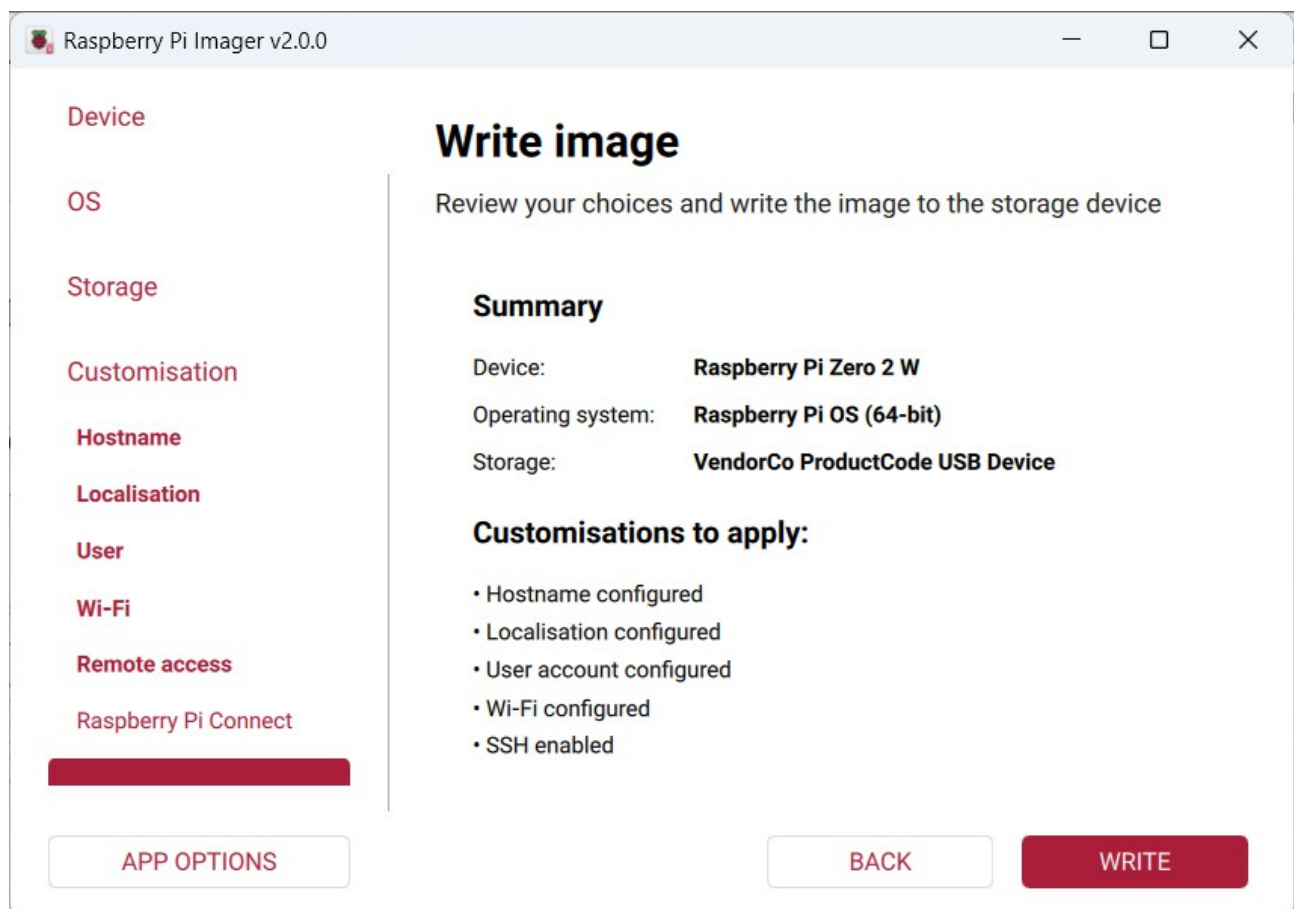
[Learn about SSH](#)

Authentication mechanism:

☒ Use password authentication

☐ Use public key authentication

APP OPTIONS SKIP CUSTOMISATION BACK NEXT



Raspberry Pi Imager v2.0.0

Device

OS

Storage

Customisation

Hostname

Localisation

User

Wi-Fi

Remote access

Raspberry Pi Connect

Write image

Review your choices and write the image to the storage device

Summary

Device:	Raspberry Pi Zero 2 W
Operating system:	Raspberry Pi OS (64-bit)
Storage:	VendorCo ProductCode USB Device

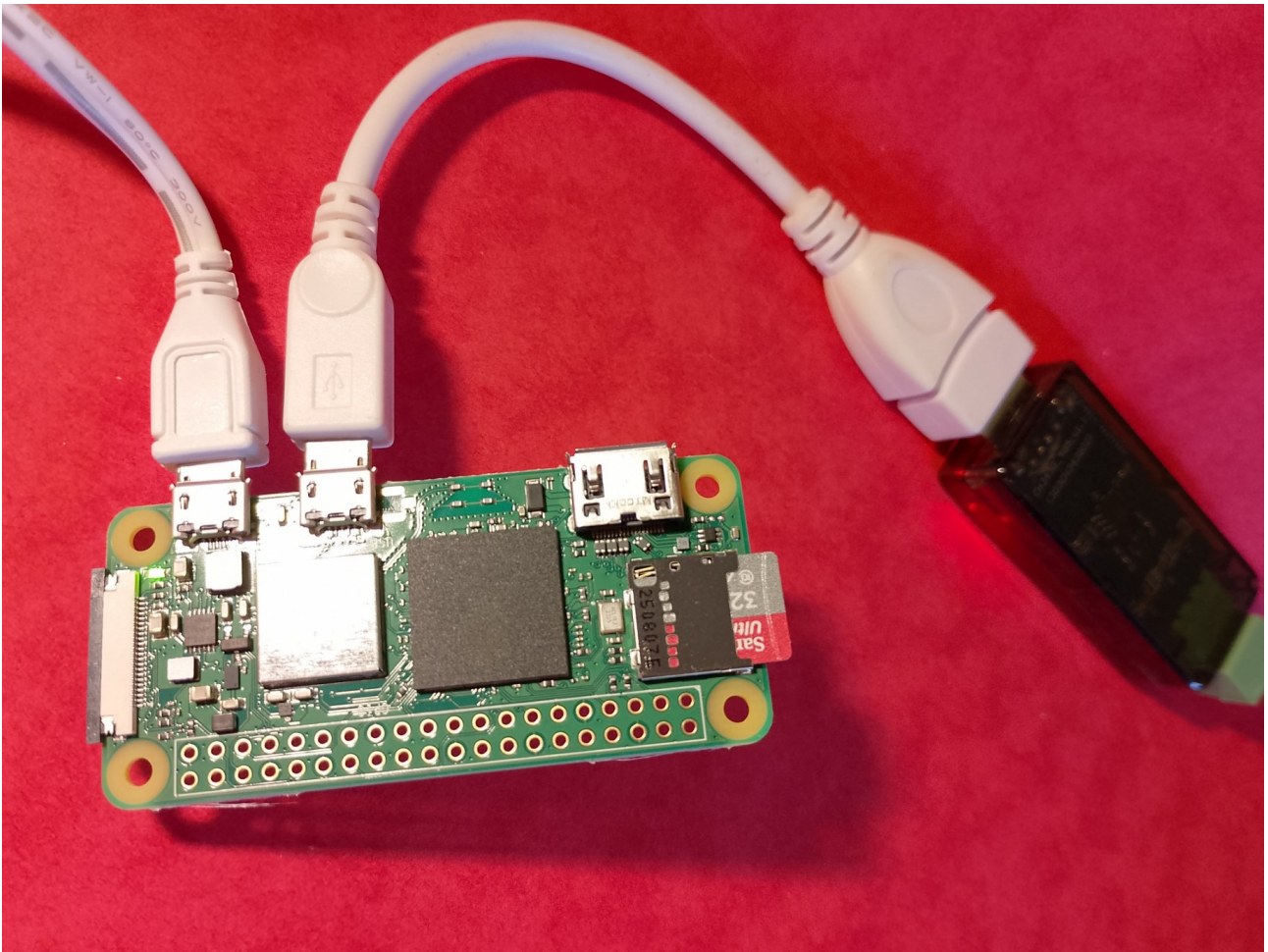
Customisations to apply:

- Hostname configured
- Localisation configured
- User account configured
- Wi-Fi configured
- SSH enabled

APP OPTIONS BACK WRITE

Using the new MicroSD in the Raspberry Pi Zero 2 W

Once the MicroSD card has been written and verified, remove it and put it into the Raspberry Pi Zero 2 W



Connect the Power supply, and wait for the LED to settle down. Now use Command Prompt

```
Command Prompt - ssh pi@r  x  +  v  -  □  x

Microsoft Windows [Version 10.0.26200.7462]
(c) Microsoft Corporation. All rights reserved.

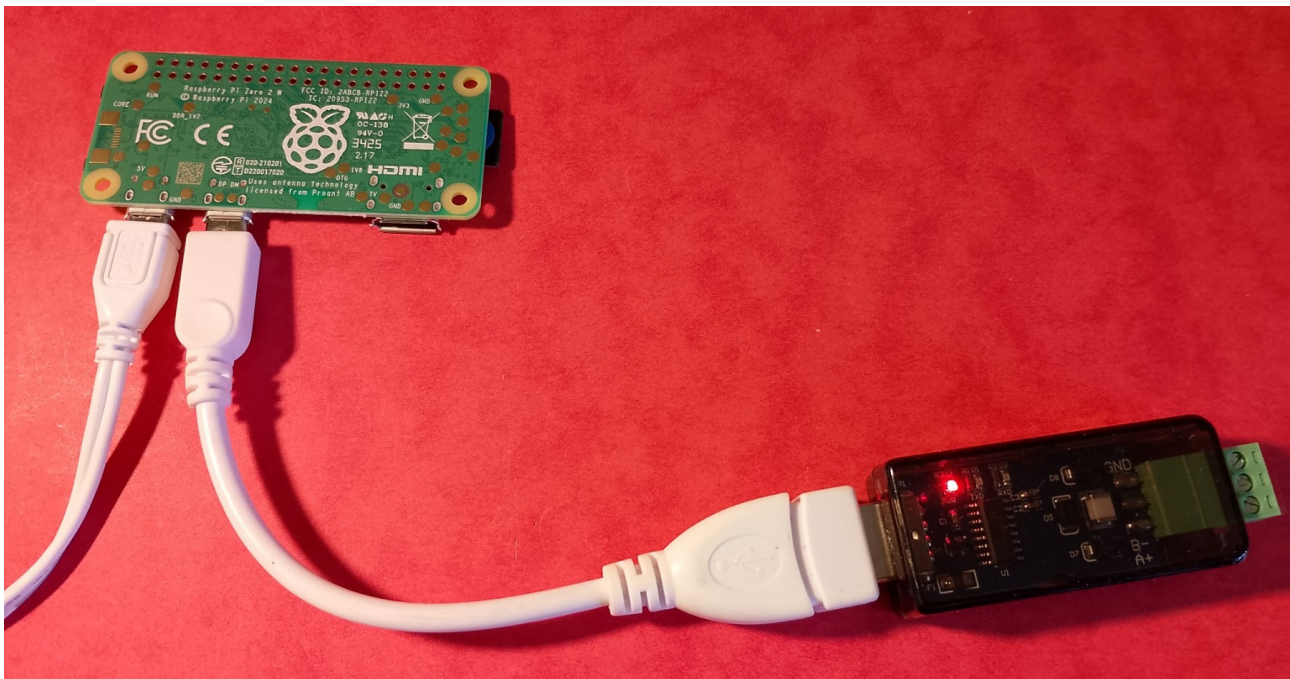
C:\Users\dough>ssh pi@rpiw2
pi@rpiw2's password: |
```

We should get to the command prompt.

```
pi@rpiw2: ~  
C:\Users\dough>ssh pi@rpiw2  
pi@rpiw2's password:  
Linux rpiw2 6.12.47+rpt-rpi-v8 #1 SMP PREEMPT Debian 1:6.12.47-1+rpt1 (2025-09-16) aarch64  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
Last login: Wed Dec 24 08:43:26 2025 from 192.168.1.187  
pi@rpiw2:~ $
```

We are at the command prompt:

Connect RS485 dongle and later the TUF-2000M and use menu 50, 51,52 to get it to log to the RS-485 dongle



The RS-485 dongle is likely to be device /dev/ttyACM0 or /dev/ttyUSB0 check using

`ls /dev/*`

use :-

```
ls -l /dev/tty* command
```



```
pi@rpiw2: ~  
crw----- 1 root tty      4, 54 Dec 24 08:32 /dev/tty54  
crw----- 1 root tty      4, 55 Dec 24 08:32 /dev/tty55  
crw----- 1 root tty      4, 56 Dec 24 08:32 /dev/tty56  
crw----- 1 root tty      4, 57 Dec 24 08:32 /dev/tty57  
crw----- 1 root tty      4, 58 Dec 24 08:32 /dev/tty58  
crw----- 1 root tty      4, 59 Dec 24 08:32 /dev/tty59  
crw----- 1 root tty      4,  6 Dec 24 08:32 /dev/tty6  
crw----- 1 root tty      4, 60 Dec 24 08:32 /dev/tty60  
crw----- 1 root tty      4, 61 Dec 24 08:32 /dev/tty61  
crw----- 1 root tty      4, 62 Dec 24 08:32 /dev/tty62  
crw----- 1 root tty      4, 63 Dec 24 08:32 /dev/tty63  
crw----- 1 pi   tty      4,  7 Dec 24 08:32 /dev/tty7  
crw----- 1 root tty      4,  8 Dec 24 08:32 /dev/tty8  
crw----- 1 root tty      4,  9 Dec 24 08:32 /dev/tty9  
crw-rw---- 1 root dialout 166,  0 Dec 24 10:13 /dev/ttyACM0  
crw----- 1 root root       5,  3 Dec 24 08:32 /dev/ttyprintk  
crw-rw---- 1 root dialout  4, 64 Dec 24 08:32 /dev/ttyS0  
pi@rpiw2:~ $ ls -l /dev/tty*
```

it lists /dev/ttyACM0.

See if data is being received

```
cat /dev/ttyACM0
```

Check port configuration using:-

```
stty -F /dev/ttyACM0
```

I have an Arduino programed to write to the Serial port /dev/USB0 every few seconds.

Connect the RS485 dongle to the TUF-2000M RS485 module and configure menu

#== the RS485 device could be /dev/ttyACM0 or /dev/ttyUSB0

```
cat /dev/ttyACM0
```

Set up a folder to

```
mkdir www
```

```
nohup cat /dev/ttyUSB0 > ~/www/capture.csv &
```



```
nohup cat /dev/ttyACM0 > ~/www/capture.csv &
```

```
tail -f ~/www/capture.csv
```

Add date and some CSV values to capture.csv

```
date >> ~/www/capture.csv
```

```
echo "=== Comment" >> ~/www/capture.csv
```

Set up a simple web server and index page to help get data off the Raspberry Pi Zero

```
sudo busybox httpd -p 0.0.0.0:80 -h /home/pi/www
```

```
http://rpiw2/capture.csv
```

in Windows command Prompt get the file using scp.

```
scp pi@rpiw2:~/www/captive
```

On the Raspberry Pi Zero 2W:

```
cd ~/www
```

Use Nano to edit this webpage:

```
nano index.html
```

```
<!doctype html>
<html>
<body>
<P>Hello </P>
<P><a href=/capture.csv> CSV samples </a></P>
</body>
</html>
```

Using a web browser, open

<http://rpiw2/>

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