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Free Your Raspberry Pi Serial Port

Posted on December 10, 2013 by Matt

By default Raspbian configures the Raspberry Pi serial port (GPIO14-GPIO15) to provide boot-up information. It also allows you to login via a connected device. If you need to use the Pi's serial port for something else (i.e. a specific add-on board) you will need to disable this default functionality.

It's something I needed to do when I played with the Ciseco Pi-Lite and luckily isn't too difficult as the instructions below will hopefully show.

Disable Login Via Serial Port

To disable the login feature we can run the following command to edit the inittab system file :

```
sudo nano /etc/inittab
```

Use the cursor keys to find the line :

```
T0:23:respawn:/sbin/getty -L ttyAMA0 115200 vt100
```

and add a # character at the beginning of the line to give :

```
#T0:23:respawn:/sbin/getty -L ttyAMA0 115200 vt100
```

Press "CTRL-X", "Y" and finally "Enter" or "Return" to save the file.

Disable Boot Messages

When the Pi is booting all the debug messages are sent to the serial port. This can be useful for some purposes but we need to turn this off to free the port for our own use.

To stop the messages being sent to the port we need to edit another system file. Run the following command to edit the cmdline.txt file :

```
sudo nano /boot/cmdline.txt
```

Use the cursor keys to find the line :

```
dwc_otg.lpm_enable=0 console=ttyAMA0,115200 kgdboc=ttyAMA0,115200 console=tty1 root=/dev/mmcblk0p2 roo
```

and remove the block of console parameters in the middle to give you :

```
dwc_otg.lpm_enable=0 console=tty1 root=/dev/mmcblk0p2 rootfstype=ext4 elevator=deadline rootwait
```

Press "CTRL-X", "Y" and finally "Enter" or "Return" to save. You should be returned to the command prompt.

Restart Pi

Now the changes have been made the Pi must be restarted for them to take effect.

Reboot using :

```
sudo reboot
```

Test Using Minicom (optional)

If you have a suitable device (e.g. a PC) to connect to your Pi via a serial interface you can use the "Minicom" utility to send data to it via the Pi's serial port. This is a quick way to test the configuration changes have been successful.

You can install Minicom using the following command :

```
sudo apt-get install minicom
```

Press "Y" when prompted.

You can then use Minicom to send and receive data over the serial port :

```
minicom -b 9600 -o -D /dev/ttyAMA0
```

Pressing keys on your keyboard should result in them appearing on your connected device.

To exit Minicom press "CTRL-A", then "X" and finally press "Return" to select "Yes" from the prompt.

Your serial port is now ready for whatever plans you have for it.