You will need:
- Any Raspberry Pi model with an available USB port
- A board with a serial connection
- A serial to USB cable
- Ethernet cables
- Network switch (Optional)
- Another computer with a telnet program installed

1. In the Raspberry Pi Terminal, issue the following command:
   sudo apt-get update.
2. Call sudo apt-get install telnet. (It may not be needed. To verify this, just uninstall the telnet package and reboot. If it still works, it implies that the telnet package is not needed)
3. Call sudo apt-get install telnetd (same comment as telnet: try uninstalling the telnetd package and reboot)
4. Call "sudo apt-get install ser2net" in order to install the ser2net package.
5. Call "which telnet" to get the file location of telnet. (If telnet is not needed, this line can be removed)
6. Call "which ser2net" to get the path of ser2net.
7. Plug the board into any available USB port on the Raspberry Pi
8. Call "dmesg | grep tty" to locate the connected serial to USB port. For me it appears as /dev/ttyUSB0.
9. Edit the ser2net.config file by calling "sudo nano /etc/ser2net.conf"

```
BANNER:banner:\r\nser2net port \p device \d [\s] (Debian GNU/Linux)\r\n\r\n

2000:telnet:600:/dev/ttyS0:9600 8DATABITS NONE 1STOPBIT banner
2001:telnet:600:/dev/ttyS1:9600 8DATABITS NONE 1STOPBIT banner
3000:telnet:600:/dev/ttyS0:19200 8DATABITS NONE 1STOPBIT banner
3001:telnet:600:/dev/ttyS1:19200 8DATABITS NONE 1STOPBIT banner
4000:telnet:600:/dev/ttyUSB0:115200 8DATABITS NONE 1STOPBIT banner
```

10. In the ser2net.conf file, add a port number and edit the required parameters of the serial to USB port, such as the baud rate.
11. Edit the /etc/rc.local file by calling "sudo nano /etc/rc.local".
12. In the /etc/rc.local file, above the exit 0, add /usr/local/sbin/ser2net -n. This will make sure that ser2net starts automatically on bootup.
13. Reboot the Raspberry Pi.
14. Call "ifconfig" to get the IP address for your Raspberry Pi. In my case, it is 10.0.0.249 as shown in the screenshot below.

```
pi@raspberrypi:~ $ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.0.0.249  netmask 255.255.255.0  broadcast 10.0.0.255
        inet6 2607:fea8:e3e0:6a6:8609:9536:24ea:f873  prefixlen 64  scopeid 0x0<
global>
        inet6 fe80::8fe2:751f:2132:ef94  prefixlen 64  scopeid 0x20<link>
        inet6 2607:fea8:e3e0:6a6::dcb4  prefixlen 128  scopeid 0x0<global>
        ether b8:27:eb:58:55:50  txqueuelen 1000  (Ethernet)
        RX packets 72375  bytes 85663700 (81.6 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 19801  bytes 3264338 (3.1 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 40  bytes 2322 (2.2 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 40  bytes 2322 (2.2 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

15. Execute the telnet program using Raspberry Pi's IP address and port number in the /etc/ser2net.conf file that corresponds to the serial to USB port on the Raspberry Pi or a remote computer by using telnet <ip address> <port number>.
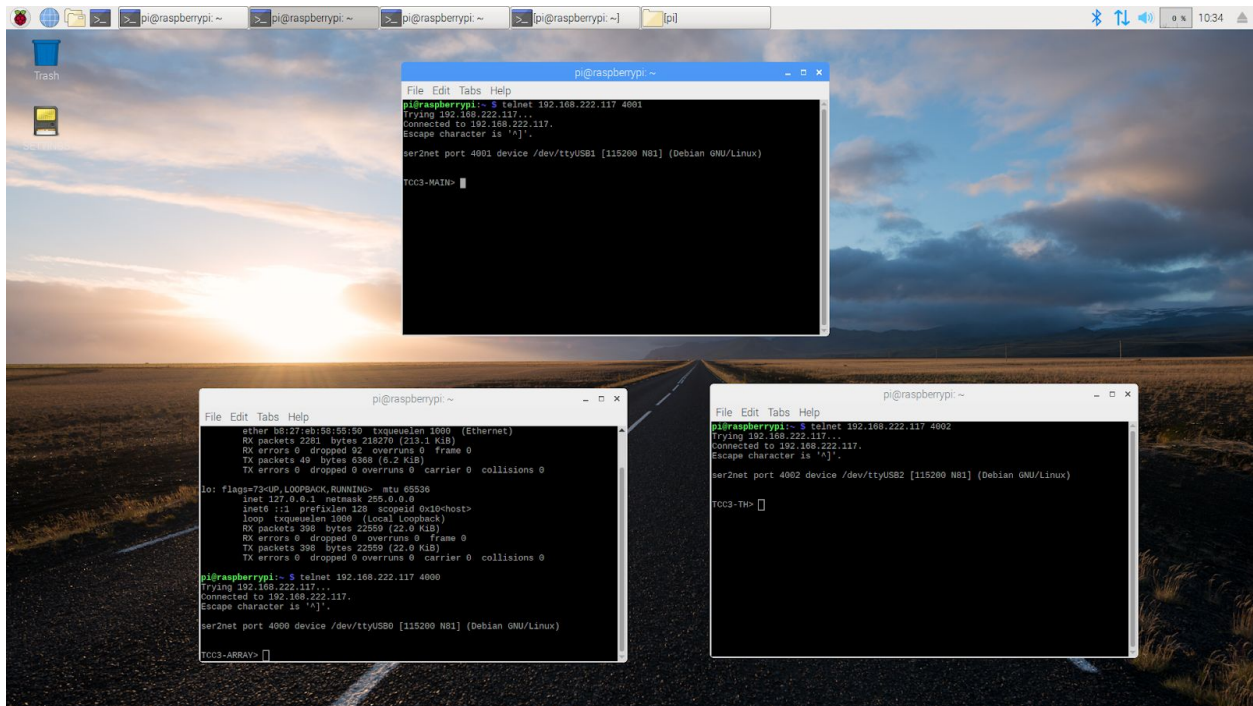
```
pi@raspberrypi:~ $ telnet 10.0.0.249 4000
Trying 10.0.0.249...
Connected to 10.0.0.249.
Escape character is '^]'.

ser2net port 4000 device /dev/ttyUSB0 [115200 N81] (Debian GNU/Linux)


telnet>
```

16. Keep pressing the return or enter key to check if there is any response from the serial connection.