Question:

What do I need to configure EVB-LAN8670-USB for operation in Debian, Ubuntu and Raspbian platforms?

Answer:

The EVB-LAN8670-USB relies on two drivers, one for the USB to MII bridge and one for the LAN8670. The USB to MII bridge driver is smsc95xx.c. In 5.11 Linux and newer, a change in the USB API to from a legacy function to a newly created function for collecting network statistics. As a result, the smsc95xx.c driver in the package needs a change to use this function for Linux 5.11 or newer. Make the following change in the /smsc95xx-drv/smsc95xx.c file:

**Change:**

**.ndo\_get\_stats64 = usbnet\_get\_stats64,**

**To:  
.ndo\_get\_stats64 = dev\_get\_tstats64,**

A move away from NetPlan is also necessary to use legacy, non-deprecated (e.g. – networking) Ethernet interfaces. The grub file (/etc/default/grub) file needs the following change:

GRUB\_CMD\_LINUX=”net.ifnames=0 biosdevname=0:

The network interfaces file (etc/network/interfaces) needs these changes to enable creation of eth0 interface to use DHCP.

allow-hotplug eth0

face eth0 inet dhcp

Then reboot the machine for the grub and network interface files to configure the ethernet interfaces.

The rest of the procedure the usual Linux build process, with the exception of changing in the MakeFile from “PWD” to “shell pwd” and starting the USB networking module after the build.

Procedure for EVB-LAN8670-USB for Debian, Ubuntu and Raspbian:

1. Update missing packages and install ifupdown

$ sudo apt update  
$ sudo apt install ifupdown net-tools

1. Change network interfaces to old network interface standard:
   1. Disable Netplan with following through the grub file (/etc/default/grub)

Update GRUB\_CMDLINE\_LINUX command in grub file: **GRUB\_CMDLINE\_LINUX="net.ifnames=0 biosdevname=0"**

* 1. (Optional) Edit /etc/network interfaces file for eth0 entry (under the loopback entry):

allow-hotplug eth0

iface eth0 inet dhcp

* 1. Update Grub and then reboot for network change to take effect:

sudo update-grub

sudo reboot

* 1. Run “ifconfig eth0”. If eth0 does not exist, restart the eth0 interface with the following commands:

$ sudo ifdown –force eth0  
$ sudo ifup eth0

1. Copy the EVB Driver package
2. Follow the Driver readMe indication
   1. **Only if Linux Kernel is 5.11 or newer**, change .ndo\_get\_stats64 variable in /smsc95xx\_drv/smc95xx.c file to point to dev\_get\_tstats64 (**.ndo\_get\_stats64 = dev\_get\_tstats64).** Otherwise, no change is necessary.
3. Before running **sudo ./t1s.sh** in the EVB Driver package, make sure the ‘usbnet’ module is loaded by running **sudo modprobe usbnet**
   1. If usbnet is not loaded, install with following command

$ sudo apt install usbnet

* 1. Run “sudo modprobe usbnet” to refresh usb devices.
  2. **If t1s.sh is not an executable run sudo chmod +x t1s.sh**

1. Run make.
   1. Change the Makefile substituting **(PWD)** with **(shell pwd)**
   2. Perform all operations using sudo

After this procedure, the EVB-LAN8670-USB should be working, and you can use the EVB-LAN8670-USB to send traffic on the 10BASE-T1S interface.