DSL SpeedTouch modem

From ArchWiki

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Introduction

This howto shows one way to get a working speedtouch USB modem. It uses the kernel driver, **not** the userspace driver. This howto assumes that your ISP uses PPPoA and not PPPoE. For info about PPPoE with these modems see first url below.

Important sites where most info comes from:

- http://www.linux-usb.org/SpeedTouch
- http://lkml.org/lkml/2004/12/27/63

If the below instructions are not enough to get it working, then read the above sites.

The following steps are needed to get the modem working:

Kernel config and ppp

Make sure you have a kernel with the proper support (at least the modules ppp_generic, pppoatm, slhc, atm, usbatm and speedtch). The default Arch kernel should work.

Otherwise make sure that your kernel supports firmware loading:

```
$ zgrep FW_LOADER /proc/config.gz
```

Install ppp: `pacman -S ppp`

The Arch Way

netcfg

Install the package `netcfg-pppoa` (https://aur.archlinux.org/packages/netcfg-pppoa/).

Now configure the connection. We'll put it in `/etc/network.d/adsl` :

```
CONNECTION='pppoa'
DESCRIPTION='ADSL connection'
INTERFACE='ppp0'
USER='username'
PASSWORD='password'
PPPOA_VPI=8
PPPOA_VCI=48

# This causes pppd to reconnect if the link goes down
LCP_ECHO_INTERVAL=15
LCP_ECHO_FAILURE=10
```

You should now be able to connect by calling `netcfg adsl` . For more details, see the netcfg wiki page.

The manual way

Configuring pppd

```
###   /etc/ppp/peers/speedtch

# To connect to using this configuration file, do
#       pppd call speedtch

lcp-echo-interval 10
lcp-echo-failure 10
noipdefault
defaultroute
user "username@ispname"
noauth
noaccomp
nopcomp
noccp
novj
holdoff 4
persist
maxfail 25
updetach
usepeerdns
plugin pppoatm.so
# Following entry is country/ISP dependent
8.48
```

The last entry depends on your country/ISP and is created from the VPI and VCI setting in the format `VPI.VCI`. This page has a VPI / VCI Setting List (http://www.linux-usb.org/SpeedTouch/faq/index.html#q12).

You also need to configure /etc/ppp/pap-secrets or chap-secrets, depending on your ISP. pap-secrets files are of the format:

```
# Secrets for authentication using PAP
# client         server  secret          IP addresses
"ISP-Username"   *       ISP-password    *
```

See The PAP/CHAP secrets file (http://www.tldp.org/HOWTO/PPP-HOWTO/x1005.html) for more details.

If you want to use the DNS servers provided by your ISP (you probably do!) then make a symlink /etc/resolv.conf pointing to /etc/ppp/resolv.conf:

```
cd etc
rm resolv.conf
ln -s ppp/resolv.conf resolv.conf
```

Configure udev

Make a file `/etc/udev/rules.d/99-speedtouch.rules` and put something like the following in it:

```
ACTION=="add", SUBSYSTEM=="atm", KERNEL=="speedtch*", RUN="/usr/bin/pppd call speedtch"
```

With this Udev will start pppd automatically, if you do not want this you can simply bring up your modem using

```
pppd call speedtch
```

Firmware

Now you have everything except the firmware loading. The easiest way is to let udev do it. Download rev4fw.zip (http://steve-parker.org/speedtouchconf/rev4fw.zip) (note disclaimer here (http://speedtouchconf.sourceforge.net/)) and unzip it. It contains two files, a small one and a big one. Copy the small file to `/usr/lib/firmware/speedtch-1.bin` and the big one to `/usr/lib/firmware/speedtch-2.bin`

```
# mkdir -p /usr/lib/firmware
# cp small_file /usr/lib/firmware/speedtch-1.bin
# cp large_file /usr/lib/firmware/speedtch-2.bin
```

If you cannot download this file then follow the instructions of the second link above and use the firmware extractor (or download another firmware which has the two files).

Troubleshooting

If the modem is being detected correctly and the firmware is loading, you should see something like the following in dmesg:

```
usbcore: registered new driver speedtch
usb 1-1: found stage 1 firmware speedtch-1.bin
CSLIP: code copyright 1989 Regents of the University of California
PPP generic driver version 2.4.2
usb 1-1: found stage 2 firmware speedtch-2.bin
ip_tables: (C) 2000-2002 Netfilter core team
ADSL line is synchronising
DSL line goes up
ADSL line is up (800 Kib/s down || 256 Kib/s up)
```

pppd output in /var/log/messages should look something like:

```
Plugin pppoatm.so loaded.
PPPoATM plugin_init
PPPoATM setdevname - remove unwanted options
PPPoATM setdevname_pppoatm - SUCCESS:8.48
Using interface ppp0
Connect: ppp0 <--> 8.48
PAP authentication succeeded
local  IP address 123.45.67.89
remote IP address 195.190.249.10
primary   DNS address 195.121.1.34
secondary DNS address 195.121.1.66
```

If you are having problems you can check pppd debug messages by adding **debug** to /etc/ppp/peers/speedtch. This can help identify authentication problems (e.g. pap vs chap auth), etc. Otherwise make sure you check your VPI/VCI settings!

For the origin of this doc, feedback or requests go to the Forum discussion (https://bbs.archlinux.org/viewtopic.php?p=80638)

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