

**Package DSLTOOL - recording and graphical
display of DSL modem data
Version 4.0.0-testing-x86_64-r60780**

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1. Documentation of the DSLTOOL package

1.1. DSLTOOL - DSL modem data recording and graphical display

1.1.1. Description

The package DSLTOOL records data from a DSL modem by the help to the 'collectd' daemon and stores it in a rrd databases. The Web-GUI of the fli4l router allows to display the generated graphs.

Among others the following data will be recorded and displayed:

- Bit allocation
- Signal noise ration
- Attenuation
- Transmit power
- Errored Seconds
- Frame Error Counter
- CRC Error Counter
- Header Error Counter

1.1.2. Supported DSL modems

At this time only the DSL modems listed in [DSLTOOL_x_MODEM](#) are supported.

At the Wiki [\[1\]](#) hints for configuration of particular modems can be found or added.

If your DSL modem is not supported, please send an eMail to check if supporting this modem type is possible.

To test the features of the DSL tools without having a supported DSL modem, it is possible to set [DSLTOOL_x_MODEM](#) to 'demo-adsl' or 'demo-vdsl' mode.

1.1.3. Configuration of the DSLTOOL package

The configuration is made, as of all fli4l packages, by adjusting the file `path/fli4l-4.0.0-testing-x86_64-r60780/<config>/dsltool.txt` to meet your own demands.

OPT_DSLTOOL The setting 'no' deactivates OPT_DSLTOOL completely. There will be no changes made on the fli4l boot medium or the archive `opt.img`. OPT_DSLTOOL does not overwrite other parts of the fli4l installation. To activate OPT_DSLTOOL set the variable OPT_DSLTOOL to 'yes'..

DSLTOOL_N Defines the number of used DSL modems.

DSLTOOL_x_MODEM Selects the DSL modem type. The variable can be set to the following values:

amazon Infineon [Amazon SE](#)

Modems/router based on Infineon/Lantiq Amazon SE chipset

ar7 TI [AR7](#)

Modems/router based on Texas Instruments AR7 chipset family

avm-tr064 AVM [Fritz!Box](#)

AVM Fritz!Box Router (Firmware \geq 5.50)

If no username is configured on the Fritz!Box then the variable [DSLTOOL_x_USER](#) needs to be set to 'dslf-config'.

bc63 Broadcom [bc63](#)

Modems/router based on Broadcom bc63xx chipset

conexant [Conexant](#)

Modems/router based on Conexant chipset

openwrt [OpenWrt](#)

Modems/router based on Broadcom bc631xx chipset with OpenWrt

speedtouch Thomson [Speedtouch](#)

ALCATEL/Thomson 5x6 and 7x6 modems/router with firmware version 5.x and 6.x

trendchip [Trendchip](#)

Modems based on Trendchip chipset

vigor DrayTek [Vigor](#)

DrayTek Vigor modems

vinax Infineon [Vinax](#)

Modems/router based on Infineon/Lantiq Vinax chipset

demo-adsl

demo-vdsl Demo modem (gives sample values)

The variable [DSLTOOL_x_PROTOCOL](#) must be set to 'demo'.

In demo mode the variables [DSLTOOL_x_HOST](#), [DSLTOOL_x_USER](#) and [DSLTOOL_x_PASS](#) are not evaluated but may not be empty.

DSLTOOL_x_PROTOCOL This optional setting defines the protocol used. Valid values are 'telnet' (default) and 'demo'

DSLTOOL_x_PORT This optional variable defines the TCP port used. If this variable is not present, the default port of the corresponding protocol is used (e.g. telnet: 23, http: 80).

DSLTOOL_x_ETHTYPE This optional setting defines the ethernet type. Valid values are 'IPv4' (default), 'IPv6' and 'auto'.

DSLTOOL_x_HOST Hostname or IP Address of the DSL modem.

Example:

```
DSLTOOL_HOST='192.168.1.254'
```

Attention, a network route to the DSL modem must be configured.

E.g. set `IP_NET_3='192.168.1.1/24'` and `IP_NET_3_DEV='eth3'` in `base.txt`. It is not sufficient to set `PPPOE_ETH='eth3'` only in `dsl.txt`. Don't forget to adapt the firewall rules to allow communication with the DSL modem (see [example](#)).

DSLTOOL_x_USER The user name for the login to the DSL modem.

Example:

```
DSLTOOL_USER='Admin'
```

DSLTOOL_x_PASS The password for the login to the DSL modem.

Example:

```
DSLTOOL_PASS='Admin'
```

DSLTOOL_x_RRD The setting 'yes' activates the data recording with the collectd daemon from the RRDTOOL package. The RRDTOOL package must be activated with `OPT_RRDTOOL='yes'` and the option `RRDTOOL_UNIXSOCK='yes'` must be set.

DSLTOOL_x_DEBUG The setting 'yes' activates a debug option. To use it, the program `tcpdump` (to be found in the TOOLS package) needs to be activated by specifying `OPT_TCPDUMP='yes'` in the TOOLS package's configuration file.

Data recording may be started using the Web-GUI's debug tab and the data recorded will be downloaded.

The data recording can be started from the SSH-shell as well by executing `/usr/bin/dsltool-dump.sh`. The data recorded will be stored in the file `/tmp/dsltool.tgz`.

The file `dsltool.tgz` will log the actual configuration of the DSLTOOL package, a `tcpdump` capture of the modem communication and the output data for later analysis.

The DSL modem's login name and password are stored in readable format in both configuration and capture file, hence the password should be changed for debugging purposes.

DSLTOOL_x_LOG The setting 'yes' activates the output of log messages to a file or syslog ([DSLTOOL_x_SYSLOG](#)).

DSLTOOL_x_SYSLOG The setting 'yes' activates logging to syslog. The variable `DSLTOOL_x_LOG='yes'` must be set.

A. Appendix to the DSLTOOL package

A.1. Tested DSL modems

Reports about additional successfully tested DSL modems are welcome.

A.1.1. amazon

- Allnet ALL 0333 CJ

A.1.2. ar7

- Funkwerk M22
- Sphairon AR860
- D-Link DSL-T380

A.1.3. avm-tr064

- Fritz!Box 3272 FW 6.30

A.1.4. bc63

- D-Link DSL-321B (Hardware Revision *Dx*)
- Zyxel VMG1312-B30A

A.1.5. conexant

- Sphairon AR800

A.1.6. openwrt

- Technicolor DGA 4132

A.1.7. speedtouch

- ALCATEL/Thomson Speedtouch 516i V6 FW 5.4.0.14
- ALCATEL/Thomson Speedtouch 585i V6 FW 6.1.0.5
- ALCATEL/Thomson Speedtouch 536i V6 FW 6.2.15.5

A.1.8. trendchip

- D-Link DSL-321B (Hardware Revision *Zx*)

A.1.9. vigor

- Vigor 130

A.1.10. vinax

- Sphairon Speedlink 1113

A.2. Examples

A.2.1. Package filter

```
# pppoe.txt
CIRC_1_PPP_ETHERNET_DEV='ethY'

# base.txt
IP_NET_x='10.0.1.1/24' # internal net
IP_NET_x_DEV='ethX'
IP_NET_x_NAME='lan-admin'
IP_NET_y='10.0.2.1/24' # modem
IP_NET_y_DEV='ethY'
IP_NET_y_NAME='lan-modem'
```

A.3. Appendix

A.3.1. Credits

The idea for DSLTOOL is based on the DSL modem tool [2] written by Andreas Matthöfer, which requires Windows and is closed -source.

The data is recorded by the help of collectd [3] and displayed with rrdtool [4].

The spectrum graphs are created with cairo/pango [5,6].

A.3.2. References

- [1] <https://ssl.networks.org/wiki/display/f/dsltool+-+Tipps>
- [2] <http://dmt.mhilfe.de/>
- [3] <http://www.collectd.org/>
- [4] <http://oss.oetiker.ch/rrdtool/>
- [5] <http://www.cairographics.org/>
- [6] <http://www.pango.org/>

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