Package DSLTOOL - recording and graphical display of DSL modem data
Version 3.10.4

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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_MODEM are supported.

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_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-3.10.4/<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_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_MODEM Selects the DSL modem type. The variable can be set to the following values:

speedtouch Thomson Speedtouch

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

ar7 TI AR7

Modems/router based on Texas Instruments AR7 chipset family

bc63 Broadcom bc63xx

Modems/router based on Broadcom bc63xx chipset

conexant Conexant

Modems/router based on Conexant chipset

vigor Vigor Vigor

Vigor modems

vinax Infineon Vinax

Modems/router based on Infineon/Lantiq Vinax chipset

demo-adsl

demo-vdsl Demo modem (gives sample values)

In demo mode the variables `DSLTOOL_HOST`, `DSLTOOL_USER` and `DSLTOOL_PASS` are not evaluated but may not be empty.

DSLTOOL_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.

DSLTOOL_USER The user name for the telnet login to the DSL modem.

Example:

```
DSLTOOL_USER='Admin'
```

DSLTOOL_PASS The password for the telnet login to the DSL modem.

Example:

```
DSLTOOL_PASS='Admin'
```

DSLTOOL_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.

A. Appendix to the DSLTOOL package

A.1. Tested DSL modems

Reports about additional successfully tested DSL modems are welcome.

A.1.1. 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.1.2. ar7

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

A.1.3. bc63xx

- D-Link DSL-321B
- Zyxel VMG1312-B30A

A.1.4. conexant

- Sphairon AR800

A.1.5. vigor

- Vigor 130

A.1.6. vinax

- Sphairon Speedlink 1113

A.2. Appendix

A.2.1. Credits

The idea for DSLTOOL is based on the DSL modem tool [1] written by Andreas Matthöfer, which requires Windows and is closed -source.

From the Linux implementation [2] by Timo Boettcher the idea for the telnet and parse implementation is borrowed.

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.2.2. References

[1] http://dmt.mhilfe.de/

[2] http://www.spida.net/projects/software/dmt-ux/index.de.html

[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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