NAME

sane−backend_conf − SANE <backend>.conf file description and format

DESCRIPTION

Introduction

Each backend has a default <*backend*>*.conf* file. Probably built automatically from the source file <*backend*>*.conf.in*.

This man page discusses in general terms how a sane backend <*backend*>*.conf* file is processed by sane sanei. It is up to each sane backend to document how it uses the data from its' own <*backend*>*.conf* file when they are passed to the backend **attach** function. Unfortunately many do not or do it poorly.

There are two reasonable places for a backend to document lines in its' <*backend*>*.conf* file. First in the backend man page. Second as comments directly in the <*backend*>*.conf* file via the <*backend*>*.conf.in* source file.

The primary purpose of the <*backend*>*.conf* file is for a sane-frontend to identify and attach all available (one or more) scanners to the appropriate sane system backend.

But a secondary purpose is provided to parse and set operational parameters using "opt_name-value pair" option lines in the <*backend*>*.conf* file associated with scanner. This feature, if exploited by a backend, allows a user to alter the pre-configured and compiled in, default settings for the scanner without having to enter them on the sane-frontend command line. In addition the backend designer/coder is not required to provide any additional backend code beyond enabling the feature.

Truly a nice feature, but unused by most backends.

Usually a backend will explicitly reject the option setting feature. As a consequence each and every non-comment line in the <*backend*>*.conf* file will be passed to the backends **attach** function. What the backend **attach** function does with these data is entirely up to the backend. (see EXAMPLES section).

backend.conf Processing Details

sanei/sanei_config.c provides the function **sanei_configure_attach** that searches for, opens, reads and parses the first <*backend*>*.conf* file found via the default search path ".:/opt/csw/etc/sane.d" or via an alternate search path defined in envvar **SANE_CONFIG_DIR** (see ENVIRONMENT section). The primary purpose is to get 1 or more scanner device ids and pass each id to the backends **attach** function.

If the sane-backend implements the option setting feature function **sanei_configure_attach** parses each "opt_name-value pair" line extracting "opt_name" and "value". It then assigns "value" to "opt_name" just as if the "opt_name" and "value" had been entered on the sane-frontend command line.

If the backend rejects the option setting feature (version 1.0.27git and prior) function **sanei_configure_attach** simply passes the parsed word list from each non-blank, non-comment line in the <*backend*>*.conf* file to the backends **attach** function. This happens even with recognized "opt_name-value pair" lines (see FILE FORMAT section). This is probably not what the backend designer had in mind, but it is out of their control since a user is free to edit a *backend.conf* file at will.

In addition, there is no user notification or other diagnostic mechanism in the **sanei_configure_attach** function to alert the user that the *backend.conf* file is (or at least appears to be) inconsistent with with the backends declared operational strategy.

At best, setting the debug envvar **SANE_DEBUG_SANEI_CONFIG** will only show the word list being passed to the backend **attach** function, without any mention that the backend does not support the "opt_name-value pair" option lines is recognized as an option line.

To observe how the backend is handling the data being passed to its' **attach** function set the backend debug envvar **SANE_DEBUG_**<**backend**>. Do this especially if scanning is failing (see EXAMPLES section an example of diagnostics).

FILE FORMAT

In general a <*backend*>*.conf* file contains lines that may be comment lines, blank lines or data lines (e.g. lines containing one or more whitespace delimited words). Blank or whitespace only lines and lines optionally starting with whitespace followed by the '#' character will be ignored and discarded when read. Comments are NOT supported data lines. If present they will be parsed as words and included in the space delimited word list and passed on to the backends' **attach** function.

Data lines are formed by whitespace delimited words:

[<whitespace>] **word_chars** [<whitespace> word_chars ...]

where

leading <whitespace> is optional.

word_chars are printable ascii chars (possibly utf-8).

additional <whitespace> delimited words are optional.

An "opt_name-value pair" option line format is:

[**option**] <whitespace> **opt_name** <whitespace> [**value**]

where

the word **option** is actually optional, but if present must be lower case and may be preceeded by whitespace.

opt_name is defined by the backend if the <*backend*>*.conf* option line feature is implemented.

value may be optional depending on the **opt_name** type as defined by the backend.

NB: **value** is NOT checked for validity before assignment to **opt_name**, as a result it is possible to cause seg faults and other fatal errors with a mis-configured <*backend*>*.conf* file.

If a backend does NOT implement the "opt_name-value pair" option line feature the *sanei/sanei_config.c* **sanei_configure_attach** function simply parses each <*backend*>*.conf* data line into a list of space delimited words and passes the word list to the backends **attach** function. It is incumbent on a backends **attach** function to handle the data appropriately.

EXAMPLES

Man Page Well Done

The sane **test** backend (**sane-test(5)**) implements the <*backend*>*.conf* option line feature for a large list of **opt_name**s and associated **value**s and documents it very well. Refer to file *backend/test.conf* and man page **sane−test(5)** for specifics.

Use Case: WTH?

Your brand new scanner has arrived but the sane-backend for it defaults to A4 paper and being in northamerica most paper is USLetter. So you

a) rtfm for sane-<backend>.5. YES! option lines are supported.

b) so per the rtfm, you insert the following two lines into *./*<*backend*>*.conf* just after the line that identifies your Canon LiDE 200 scanner (e.g usb 0x04a9 0x1905)
    option x 216
    option y 280

And run another scan. No joy, WTH? The scan still defaults to A4 paper dimensions. So you set **SANE_DEBUG_SANEI_CONFIG** = 4 and **SANE_DEBUG_**<**backend**> = 3 on the same command line and run the scan again:

```
   $ ( SANE_DEBUG_SANEI_CONFIG=4  SANE_DEBUG_GENESYS=3 \
   ./frontend/scanimage --format png > usletter_dims.png )
 1 [sanei_debug] Setting debug level of sanei_config to 4.
 2 [sanei_config] sanei_config_open: attempting to open './dll.conf'
 3 [sanei_config] sanei_config_open: attempting to open '/opt/csw/etc/sane.d/dll.conf'
 4 [sanei_config] sanei_config_open: using file '/opt/csw/etc/sane.d/dll.conf'
 5 [sanei_config] sanei_config_open: attempting to open './dll.aliases'
 6 [sanei_config] sanei_config_open: attempting to open '/opt/csw/etc/sane.d/dll.aliases'
```

```
 7 [sanei_config] sanei_config_open: could not find config file ‘dll.aliases’
 8 [sanei_debug] Setting debug level of genesys to 3.
 9 [genesys] SANE Genesys backend version 1.0 build 2511 from sane-backends 1.0.27git
10 [genesys] SANE Genesys backend built with libusb
11 [sanei_config] sanei_configure_attach: start
12 [sanei_config] sanei_config_open: attempting to open ‘./genesys.conf’
13 [sanei_config] sanei_config_open: using file ‘./genesys.conf’
14 [sanei_config] sanei_configure_attach: trying to attach with ’usb 0x04a9 0x1905’
15 [sanei_config] sanei_configure_attach: trying to attach with ’option x 216’
16 [genesys] attach: couldn’t open device ‘option x 216’: Invalid argument
17 [genesys] attach_one_device: Invalid argument
18 [sanei_config] sanei_configure_attach: trying to attach with ’option y 280’
19 [genesys] attach: couldn’t open device ‘option y 280’: Invalid argument
20 [genesys] attach_one_device: Invalid argument
21 [sanei_config] sanei_configure_attach: exit
22 [sanei_config] sanei_configure_attach: start
23 [sanei_config] sanei_config_open: attempting to open ‘./genesys.conf’
24 [sanei_config] sanei_config_open: using file ‘./genesys.conf’
25 [sanei_config] sanei_configure_attach: trying to attach with ’usb 0x04a9 0x1905’
26 [sanei_config] sanei_configure_attach: trying to attach with ’option x 216’
27 [genesys] attach: couldn’t open device ‘option x 216’: Invalid argument
28 [genesys] attach_one_device: Invalid argument
29 [sanei_config] sanei_configure_attach: trying to attach with ’option y 280’
30 [genesys] attach: couldn’t open device ‘option y 280’: Invalid argument
31 [genesys] attach_one_device: Invalid argument
32 [sanei_config] sanei_configure_attach: exit
33 [sanei_config] sanei_config_open: attempting to open ‘./net.conf’
34 [sanei_config] sanei_config_open: attempting to open ‘/opt/csw/etc/sane.d/net.conf’
35 [sanei_config] sanei_config_open: using file ‘/opt/csw/etc/sane.d/net.conf’
NOTE: Line numbers added for reference.
```

Notice lines 11-21 and 22-32.
The sequence happens twice because the scanner device to use (e.g. -d <DEVICE> is not listed on the command line (see **scanimage(1)**). Why this second pass is needed is unclear, but it does not occur when -d <DEVICE> is included on command line.

Referring to lines 15, 16, and lines 18, 19.
sanei_configure_attach parses the "opt_name-value pair" option data and passes the word list to the backends **attach** function, which, in this case, attempts to use the data as a device id and tries to open it. This fails but nothing fatal to the program occurs and the next .conf line is processed similarly.

Conclusively, this backend does **NOT** support the "opt_name-value pair" setting feature regardless of what the sane-<backend>.5 (i.e. sane-genesys.5) indicates. But at least it is not crashing!

How To Fix This Issue

What can you do to avoid having to enter USLetter dimensions the command line each and every time you run a scan? (ordered by decreasing effort but increasing out of pocket expense):

1) hack the backend and implement the at runtime "opt_name-value pair" option setting features you want and need and re-build.
2) hack the backend *∗_low.c* file that sets the scanner model device defaults and re-build.
3) use a more advanced frontend that supports pre-defined options.
4) write a scanimage wrapper script that presets the various objectionable defaults.
5) get a scanner that uses a more user friendly backend.

Suggested Man Page Change/Improvement

If you come across a backend with the <*backend*>*.conf* option line feature inadequately documented either on the sane-<backend>.5 man page or with a lack of commentary in the <*backend*>*.conf* file you are encouraged to help improve the documentation by, at the very least, notifying the sane-devel people or better yet, by submitting suggested changes to **sane-devel@alioth-lists.debian.net**.

Recommended Change To *doc/sane-genesys.man*

As shown above the genesys backend man page (for sane-backend version 1.0.27git and prior) (file *doc/sane-genesys.man*) is in need of improvement/change.

In section "CONFIGURATION" the man page explicitly states:

The file can also contain option lines.

That sentence is, at best, misleading, and arguably just wrong, as demonstrated in the above diagnostic output.

Recommend the sentence be changed to be something like:

The file may include option lines, but they will have no effect and will be silently ignored.

It would also be good to add a comment line to the *./backend/genesys.conf.in* source file indicating that "opt_name-value pair" option lines are unsupported. Just a thought.

ENVIRONMENT

SANE_CONFIG_DIR

This environment variable specifies the search path for the backend configuration file. Under UNIX, the directories are separated by a colon (‘:’), under OS/2 (e.g. dossy heritage systems), they are separated by a semi-colon (‘;’).

If envvar **SANE_CONFIG_DIR** is not set, the default search path is:
1) the current working directory (".")
2) the compiled in CONFIGDIR ("/opt/csw/etc/sane.d")

If envvar **SANE_CONFIG_DIR** ends with the directory separator character, (e.g. ’:’ or ’;’) then the default directories will also be searched after the explicitly specified directory list.

For example, setting **SANE_CONFIG_DIR** to "/tmp/config:" would result in directories "/tmp/config", ".", and "/opt/csw/etc/sane.d" being searched (in that order).

FILES

<*backend*>*.conf* wherever it is found.

<*backend*>*.conf.in* source file for your scanner.

backend/test.conf for reference.

SEE ALSO

scanimage(1), sane(7), sane-<backend>(5) for your scanner.

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send changes/comments to **sane-devel@alioth-lists.debian.net**