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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'sane.7' command

\$ man sane.7

sane(7) SANE Scanner Access Now Easy sane(7)

NAME

sane - Scanner Access Now Easy: API for accessing scanners

DESCRIPTION

SANE is an application programming interface (API) that provides standardized access to any raster image scanner hardware. The standardized interface makes it possible to write just one driver for each scanner device instead of one driver for each scanner and application.

While SANE is primarily targeted at a UNIX environment, the standard has been carefully designed to make it possible to implement the API on virtually any hardware or operating system.

This manual page provides a summary of the information available about SANE.

If you have trouble getting your scanner detected, read the PROBLEMS section.

TERMINOLOGY

An application that uses the SANE interface is called a SANE frontend.

A driver that implements the SANE interface is called a SANE backend.

A meta backend provides some means to manage one or more other backends.

SOFTWARE PACKAGES

The package sane-backends contains backends, documentation, networking support, and the command line frontend scanimage(1). The frontends xs?

canimage(1), xcam(1), and scanadf(1) are included in the package sane-frontends. Both packages can be downloaded from the SANE homepage (<http://www.sane-project.org/>). Information about other frontends and backends can also be found on the SANE homepage.

GENERAL INFORMATION

The following sections provide short descriptions and links to more information about several aspects of SANE. A name with a number in parenthesis (e.g. sane-dll(5)) points to a manual page. In this case man 5 sane-dll will display the page. Entries like /usr/share/doc/sane-backends/README are references to text files that were copied to the SANE documentation directory (/usr/share/doc/sane-backends/) during installation. Everything else is a URL to a resource on the web.

SANE homepage

Information on all aspects of SANE including a tutorial and a link to the SANE FAQ can be found on the SANE homepage: <http://www.sane-project.org/>.

SANE device lists

The SANE device lists contain information about the status of SANE support for a specific device. If your scanner is not listed there (either supported or unsupported), please contact us. See section HOW CAN YOU HELP SANE for details. There are lists for specific releases of SANE, for the current development version and a search engine: <http://www.sane-project.org/sane-supported-devices.html>. The lists are also installed on your system at /usr/share/doc/sane-backends/.

SANE mailing list

There is a mailing list for the purpose of discussing the SANE standard and its implementations: sane-devel. Despite its name, the list is not only intended for developers, but also for users. There are also some more lists for special topics. However, for users, sane-devel is the right list. How to subscribe and unsubscribe: <http://www.sane-project.org/mailling-lists.html>.

SANE IRC channel

The IRC (Internet Relay Chat) channel #sane can be found on the

Freenode network (irc.freenode.net). It's for discussing SANE problems, talking about development and general SANE related chatting. Before asking for help, please read the other documentation mentioned in this manual page. The channel's topic is also used for announcements of problems with SANE infrastructure (mailing lists, web server, etc.).

Compiling and installing SANE

Look at /usr/share/doc/sane-backends/README and the os-dependent README files for information about compiling and installing SANE.

SCSI configuration

For information about various systems and SCSI controllers see sane-scsi(5).

USB configuration

For information about USB configuration see sane-usb(5).

FRONTENDS AND MISCELLANEOUS PROGRAMS

scanimage

Command-line frontend. See scanimage(1).

saned

SANE network daemon that allows remote clients to access image acquisition devices available on the local host. See saned(8).

sane-find-scanner

Command-line tool to find SCSI and USB scanners and determine their UNIX device files. See sane-find-scanner(1).

Also, have a look at the sane-frontends package (which includes xscanimage(1), xcam(1), and scanadf(1)) and the frontend information page at <http://www.sane-project.org/sane-frontends.html>.

BACKENDS FOR SCANNERS

abatn

Supports Abaton flatbed scanners such as the Scan 300/GS (8bit, 256 levels of gray) and the Scan 300/S (black and white, untested). See sane-abaton(5) for details.

agfafocus

Supports AGFA Focus scanners and the Siemens S9036 (untested). See

sane-agfafocus(5) for details.

apple

Supports Apple flatbed scanners including the following scanners: AppleScanner, OneScanner and ColorOneScanner. See sane-apple(5) for details.

artec

Supports several Artec/Ultima SCSI flatbed scanners as well as the BlackWidow BW4800SP and the Plustek 19200S. See sane-artec(5) for details.

artec_eplus48u

Supports the Artec E+ 48U scanner and re-badged models like Tevion MD 9693, Medion MD 9693, Medion MD 9705 and Trust Easy Webscan 19200. See sane-artec_eplus48u(5) for details.

as6e

Supports the Artec AS6E parallel port interface scanner. See sane-as6e(5) for details.

avision

Supports several Avision based scanners including the original Avision scanners (like AV 630, AV 620, ...) as well as the HP ScanJet 53xx and 74xx series, Fujitsu ScanPartner, some Mitsubishi and Minolta film-scanners. See sane-avision(5) for details.

bh

Supports Bell+Howell Copiscan II series document scanners. See sane-bh(5) for details.

canon

Supports the CanoScan 300, CanoScan 600, and CanoScan 2700F SCSI flatbed scanners. See sane-canon(5) for details.

canon630u

Supports the CanoScan 630u and 636u USB scanners. See sane-canon630u(5) for details.

canon_dr

Supports the Canon DR-Series ADF SCSI and USB scanners. See sane-canon_dr(5) for details.

canon_lide70

Supports the CanoScan LiDE 70 USB scanner. See sane-canon_lide70(5) for details.

canon_pp

Supports the CanoScan FB330P, FB630P, N340P and N640P parallel port scanners. See sane-canon_pp(5) for details.

cardscan

Support for Corex Cardscan USB scanners. See sane-cardscan(5) for details.

coolscan coolscan2 coolscan3

Supports Nikon Coolscan film-scanners. See sane-coolscan(5), sane-coolscan2(5) and sane-coolscan3(5) for details.

epjitsu

Supports Epson-based Fujitsu USB scanners. See sane-epjitsu(5) for details.

epson

Supports Epson SCSI, parallel port and USB flatbed scanners. See sane-epson(5) for details.

escl

Supports scanners through the eSCL protocol. See sane-escl(5) for details.

fujitsu

Supports most Fujitsu SCSI and USB, flatbed and adf scanners. See sane-fujitsu(5) for details.

genesys

Supports several scanners based on the Genesys Logic GL646, GL841, GL843, GL847 and GL124 chips like the Medion 6471 and Hewlett-Packard 2300c.

See sane-genesys(5) for details.

gt68xx

Supports scanners based on the Grandtech GT-6801 and GT-6816 chips like the Artec Ultima 2000 and several Mustek BearPaw CU and TA models. Some Genius, Lexmark, Medion, Packard Bell, Plustek, and Trust

scanners are also supported. See sane-gt68xx(5) for details.

hp

Supports Hewlett-Packard ScanJet scanners which utilize SCL (Scanner Control Language by HP). See sane-hp(5) for details.

hpsj5s

Supports the Hewlett-Packard ScanJet 5S scanner. See sane-hpsj5s(5) for details.

hp3500

Supports the Hewlett-Packard ScanJet 3500 series. See sane-hp3500(5) for details.

hp3900

Supports the Hewlett-Packard ScanJet 3900 series. See sane-hp3900(5) for details.

hp4200

Supports the Hewlett-Packard ScanJet 4200 series. See sane-hp4200(5) for details.

hp5400

Supports the Hewlett-Packard ScanJet 54XXC series. See sane-hp5400(5) for details.

hpljm1005

Supports the Hewlett-Packard LaserJet M1005 scanner. See sane-hpljm1005(5) for details.

hs2p

Supports the Ricoh IS450 family of SCSI scanners. See sane-hs2p(5) for details.

ibm

Supports some IBM and Ricoh SCSI scanners. See sane-ibm(5) for details.

kodak

Supports some large Kodak scanners. See sane-kodak(5) for details.

kodakaio

Supports Kodak AiO printer/scanners. See sane-kodakaio(5) for details.

kvs1025

Supports Panasonic KV-S102xC scanners. See sane-kvs1025(5) for details.

leo

Supports the LEO S3 and the Across FS-1130, which is a re-badged LEO FS-1130 scanner. See sane-leo(5) for details.

lexmark

Supports the Lexmark X1100 series of USB scanners. See sane-lexmark(5) for details.

ma1509

Supports the Mustek BearPaw 1200F USB flatbed scanner. See sane-ma1509(5) for details.

magicolor

Supports the KONICA MINOLTA magicolor 1690MF multi-function printer/scanner/fax. See sane-magicolor(5) for details.

matsushita

Supports some Panasonic KVSS high speed scanners. See sane-matsushita(5) for details.

microtek

Supports "second generation" Microtek scanners with SCSI-1 command set. See sane-microtek(5) for details.

microtek2

Supports some Microtek scanners with a SCSI-2 command set. See sane-microtek2(5) for details.

mustek

Supports most Mustek SCSI flatbed scanners including the Paragon and ScanExpress series and the 600 II N and 600 II EP (non-SCSI). Some Trust scanners are also supported. See sane-mustek(5) for details.

mustek_pp

Supports Mustek parallel port flatbed scanners. See sane-mustek_pp(5) for details.

mustek_usb

Supports some Mustek ScanExpress USB flatbed scanners. See

sane-mustek_usb(5) for details.

mustek_usb2

Supports scanners using the SQ113 chipset like the Mustek BearPaw 2448 TA Pro USB flatbed scanner. See sane-mustek_usb2(5) for details.

nec

Supports the NEC PC-IN500/4C SCSI scanner. See sane-nec(5) for details.

niash

Supports the Agfa Snapscan Touch and the HP ScanJet 3300c, 3400c, and 4300c USB flatbed scanners. See sane-niash(5) for details.

p5

Supports the Primax PagePartner. See sane-p5(5) for details.

pie

Supports Pacific Image Electronics (PIE) and Devcom SCSI flatbed scanners. See sane-pie(5) for details.

pixma

Supports Canon PIXMA MP series (multi-function devices), Canon imageCLASS series (laser devices), Canon MAXIFY series and some Canon CanoScan series. See sane-pixma(5) for details.

plustek

Supports USB flatbed scanners that use the National Semiconductor LM983[1/2/3] chipset aka Merlin. Scanners using this LM983x chips include some models from Plustek, KYE/Genius, Hewlett-Packard, Mustek, Umax, Epson, and Canon. See sane-plustek(5) for details.

plustek_pp

Supports Plustek parallel port flatbed scanners using the Plustek ASIC P96001, P96003, P98001 and P98003, which includes some models from Plustek, KYE/Genius, Primax. See sane-plustek_pp(5) for details.

ricoh

Supports the Ricoh flatbed scanners IS50 and IS60. See sane-ricoh(5) for details.

ricoh2

Supports the Ricoh flatbed scanners: SG-3100SNw, SP-100SU, and

SP-111SU. See sane-ricoh2(5) for details.

s9036

Supports Siemens 9036 flatbed scanners. See sane-s9036(5) for details.

sceptre

Supports the Sceptre S1200 flatbed scanner. See sane-sceptre(5) for details.

sharp

Supports Sharp SCSI scanners. See sane-sharp(5) for details.

sm3600

Supports the Microtek ScanMaker 3600 USB scanner. See sane-sm3600(5) for details.

sm3840

Supports the Microtek ScanMaker 3840 USB scanner. See sane-sm3840(5) for details.

snapscan

Supports AGFA SnapScan flatbed scanners including some which are rebadged to other brands. See sane-snapscan(5) for details.

sp15c

Supports the Fujitsu FCPA ScanPartner 15C flatbed scanner. See sane-sp15c(5) for details.

st400

Supports the Siemens ST400 and ST800. See sane-st400(5) for details.

tamarack

Supports Tamarack Artiscan flatbed scanners. See sane-tamarack(5) for details.

teco1 teco2 teco3

Supports some TECO scanners, usually sold under the Relisys, Trust, Primax, Piotech, Dextra names. See sane-teco1(5), sane-teco2(5) and sane-teco3(5) for details.

u12

Supports USB flatbed scanners based on Plustek's ASIC 98003 (parallel-port ASIC) and a GeneSys Logics' USB-parport bridge chip like the

Plustek OpticPro U(T)12. See sane-u12(5) for details.

umax

Supports UMAX-SCSI-scanners and some Linotype Hell SCSI-scanners. See sane-umax(5) for details.

umax_pp

Supports Umax parallel port flatbed scanners and the HP 3200C. See sane-umax_pp(5) for details.

umax1200u

Supports the UMAX Astra 1220U (USB) flatbed scanner (and also the UMAX Astra 2000U, sort of). See sane-umax1220u(5) for details.

xerox_mfp

Supports multiple Samsung-based Samsung, Xerox, and Dell scanners. See sane-xerox_mfp(5) for details.

Also, have a look at the backend information page at <http://www.sane-project.org/sane-supported-devices.html> and the list of projects in `/usr/share/doc/sane-backends/PROJECTS`.

BACKENDS FOR DIGITAL CAMERAS

dc210

Supports the Kodak DC210 Digital Camera. See sane-dc210(5).

dc240

Supports the Kodak DC240 Digital Camera. See dc240(5).

dc25

Supports Kodak DC20/DC25 Digital Cameras. See dc25(5).

dmc

Supports the Polaroid Digital Microscope Camera. See dmc(5).

gphoto2

Supports digital cameras supported by the gphoto2 library package. (See <http://www.gphoto.org> for more information and a list of supported cameras.) Gphoto2 supports over 140 different camera models. However, please note that more development and testing is needed before all of these cameras will be supported by SANE backend. See gphoto2(5).

qcam

Supports Connectix QuickCam cameras. See `qcam(5)`.

`stv680`

Supports webcams with a `stv680` chip. See `stv680(5)` for details.

Also, have a look at the backend information page at

<http://www.sane-project.org/sane-supported-devices.html> and the list of projects in `/usr/share/doc/sane-backends/PROJECTS`.

MISCELLANEOUS BACKENDS

`dll`

Implements a SANE backend that provides access to an arbitrary number of other SANE backends by dynamic loading. See `sane-dll(5)`.

`net`

The SANE network daemon `saned(8)` provides access to scanners located on different computers in connection with the `net` backend. See `sane-net(5)` and `saned(8)`.

`pnm`

PNM image reader pseudo-backend. The purpose of this backend is primarily to aid in debugging of SANE frontends. See `sane-pnm(5)`.

`pint`

Supports scanners that use the PINT (Pint Is Not Twain) device driver. The PINT driver is being actively developed on the OpenBSD platform, and has been ported to a few other *NIX-like operating systems. See `sane-pint(5)`.

`test`

Tests frontends and the SANE installation. It provides test pictures and various test options. See `sane-test(5)`.

`v4l`

Provides generic access to video cameras and similar equipment using the V4L (Video for Linux) API. See `sane-v4l(5)`.

Also, have a look at the backend information page at

<http://www.sane-project.org/sane-supported-devices.html> and the list of projects in `/usr/share/doc/sane-backends/PROJECTS`.

CHANGING THE TOP-LEVEL BACKEND

By default, all SANE backends (drivers) are loaded dynamically by the

sane-dll meta backend. If you have any questions about the dynamic loading, read sane-dll(5). SANE frontends can also be linked to other backends directly by copying or linking a backend to libsane.so in /usr/lib64/sane.

DEVELOPER'S DOCUMENTATION

It's not hard to write a SANE backend. It can take some time, however. You should have basic knowledge of C and enough patience to work through the documentation and find out how your scanner works. Appended is a list of some documents that help to write backends and frontends.

The SANE standard defines the application programming interface (API) that is used to communicate between frontends and backends. It can be found at <http://sane-project.gitlab.io/standard/>.

There is some more information for programmers in /usr/share/doc/sane-backends/backend-writing.txt. Most of the internal SANE routines (sanei) are documented using doxygen:

<http://www.sane-project.org/sanei/>. Before a new backend or frontend project is started, have a look at /usr/share/doc/sane-backends/PROJECTS for projects that are planned or not yet included into the SANE distribution and at our bug-tracking system:

<http://www.sane-project.org/bugs.html>.

There are some links on how to find out about the protocol of a scanner: <http://www.meier-geinitz.de/sane/misc/develop.html>.

If you start writing a backend or frontend or any other part of SANE, please contact the sane-devel mailing list for coordination so that work is not duplicated.

FILES

/etc/sane.d/*.conf

The backend configuration files.

/usr/lib64/sane/libsane-*.a

The static libraries implementing the backends.

/usr/lib64/sane/libsane-*.so

The shared libraries implementing the backends (present on systems that support dynamic loading).

/usr/share/doc/sane-backends/*

SANE documentation: The READMEs, text files for backends etc.

PROBLEMS

If your device isn't found but you know that it is supported, make sure that it is detected by your operating system. For SCSI and USB scanners, use the `sane-find-scanner(1)` utility. It prints one line for each scanner it has detected and some comments (#). If `sane-find-scanner(1)` finds your scanner only as root but not as normal user, the permissions for the device files are not adjusted correctly. If the scanner isn't found at all, the operating system hasn't detected it and may need some help. Depending on the type of your scanner, read `sane-usb(5)` or `sane-scsi(5)`. If your scanner (or other device) is not connected over the SCSI bus or USB, read the backend's manual page for details on how to set it up.

Is your scanner detected by the operating system but not by SANE? Try `scanimage -L`. If the scanner is not found, check that the backend's name is mentioned in `/etc/sane.d/dll.conf`. Some backends are commented out by default. Remove the comment sign for your backend in this case. Also some backends aren't compiled at all if one of their prerequisites are missing. Examples include `dc210`, `dc240`, `canon_pp`, `hpsj5s`, `gphoto2`, `pint`, `qcam`, `v4l`, `net`, `sm3600`, `snapscan`, `pnm`. If you need one of these backends and it isn't available, read the build instructions in the README file and the individual manual pages of the backends.

Another reason for not being detected by `scanimage -L` may be a missing or incorrect configuration in the backend's configuration file. While SANE tries to automatically find most scanners, some can't be setup correctly without the intervention of the administrator. Also on some operating systems auto-detection may not work. Check the backend's manual page for details.

If your scanner is still not found, try setting the various environment variables that are available to assist in debugging. The environment variables are documented in the relevant manual pages. For example, to get the maximum amount of debug information when testing a Mustek SCSI

scanner, set environment variables `SANE_DEBUG_DLL`, `SANE_DEBUG_MUSTEK`, and `SANE_DEBUG_SANEI_SCSI` to 128 and then invoke `scanimage -L`. The debug messages for the dll backend tell if the mustek backend was found and loaded at all. The mustek messages explain what the mustek backend is doing while the SCSI debugging shows the low level handling. If you can't find out what's going on by checking the messages carefully, contact the sane-devel mailing list for help (see REPORTING BUGS below). Now that your scanner is found by `scanimage -L`, try to do a scan: `scanimage >image.pnm`. This command starts a scan for the default scanner with default settings. All the available options are listed by running `scanimage --help`. If scanning aborts with an error message, turn on debugging as mentioned above. Maybe the configuration file needs some tuning, e.g. to setup the path to a firmware that is needed by some scanners. See the backend's manual page for details. If you can't find out what's wrong, contact sane-devel.

To check that the SANE libraries are installed correctly you can use the test backend, even if you don't have a scanner or other SANE device:

```
scanimage -d test -T
```

You should get a list of PASSEd tests. You can do the same with your backend by changing "test" to your backend's name.

So now scanning with `scanimage(1)` works and you want to use one of the graphical frontends like `xsane(1)`, `xscanimage(1)`, or `quiteinsane(1)` but those frontends don't detect your scanner? One reason may be that you installed two versions of SANE. E.g. the version that was installed by your distribution in `/usr` and one you installed from source in `/usr/local/`. Make sure that only one version is installed. Another possible reason is, that your system's dynamic loader can't find the SANE libraries. For Linux, make sure that `/etc/ld.so.conf` contains `/usr/local/lib` and does not contain `/usr/local/lib/sane`. See also the documentation of the frontends.

HOW CAN YOU HELP SANE

We appreciate any help we can get. Please have a look at our web page

about contributing to SANE: <http://www.sane-project.org/contrib.html>

CONTACT

For reporting bugs or requesting new features, please use our bug-tracking system: <http://www.sane-project.org/bugs.html>. You can also contact the author of your backend directly. Usually the email address can be found in the `/usr/share/doc/sane-backends/AUTHORS` file or the backend's manpage. For general discussion about SANE, please use the SANE mailing list `sane-devel` (see <http://www.sane-project.org/mailling-lists.html> for details).

SEE ALSO

`saned(8)`, `sane-find-scanner(1)`, `scanimage(1)`, `sane-abaton(5)`, `sane-ag?fafocus(5)`, `sane-apple(5)`, `sane-artec(5)`, `sane-artec_eplus48u(5)`, `sane-as6e(5)`, `sane-avision(5)`, `sane-bh(5)`, `sane-canon(5)`, `sane-canon630u(5)`, `sane-canon_dr(5)`, `sane-canon_pp(5)`, `sane-card?scan(5)`, `sane-coolscan(5)`, `sane-coolscan2(5)`, `sane-coolscan3(5)`, `sane-dc210(5)`, `sane-dc240(5)`, `sane-dc25(5)`, `sane-dll(5)`, `sane-dmc(5)`, `sane-epson(5)`, `sane-escl(5)`, `sane-fujitsu(5)`, `sane-genesys(5)`, `sane-gphoto2(5)`, `sane-gt68xx(5)`, `sane-hp(5)`, `sane-hpsj5s(5)`, `sane-hp3500(5)`, `sane-hp3900(5)`, `sane-hp4200(5)`, `sane-hp5400(5)`, `sane-hpljm1005(5)`, `sane-ibm(5)`, `sane-kodak(5)`, `sane-leo(5)`, `sane-lex?mark(5)`, `sane-ma1509(5)`, `sane-matsushita(5)`, `sane-microtek2(5)`, `sane-microtek(5)`, `sane-mustek(5)`, `sane-mustek_pp(5)`, `sane-mustek_usb(5)`, `sane-mustek_usb2(5)`, `sane-nec(5)`, `sane-net(5)`, `sane-niash(5)`, `sane-pie(5)`, `sane-pint(5)`, `sane-plustek(5)`, `sane-plus?tek_pp(5)`, `sane-pnm(5)`, `sane-qcam(5)`, `sane-ricoh(5)`, `sane-ricoh2(5)`, `sane-s9036(5)`, `sane-sceptre(5)`, `sane-scsi(5)`, `sane-sharp(5)`, `sane-sm3600(5)`, `sane-sm3840(5)`, `sane-snapscan(5)`, `sane-sp15c(5)`, `sane-st400(5)`, `sane-stv680(5)`, `sane-tamarack(5)`, `sane-teco1(5)`, `sane-teco2(5)`, `sane-teco3(5)`, `sane-test(5)`, `sane-u12(5)`, `sane-umax1220u(5)`, `sane-umax(5)`, `sane-umax_pp(5)`, `sane-usb(5)`, `sane-v4l(5)`, `sane-xerox_mfp(5)`

AUTHOR

David Mosberger-Tang and many many more (see `/usr/share/doc/sane-back?`

ends/AUTHORS for details). This man page was written by Henning Meier-Geinitz. Quite a lot of text was taken from the SANE standard, several man pages, and README files.

03 Jan 2020

sane(7)