Red Hat Enterprise Linux Release 9.2 Manual Pages on 'sane-pixma.5' command

$ man sane-pixma.5

sane-pixma(5)   SANE Scanner Access Now Easy   sane-pixma(5)

NAME

   sane-pixma - SANE backend for Canon Multi-Function Printers and

   CanoScan Scanners

DESCRIPTION

   The sane-pixma library implements a SANE (Scanner Access Now Easy)

   backend that provides access to Canon PIXMA / i-SENSYS / imageCLASS /

   imageRUNNER multi-function devices (All-in-one printers) and the Canon

   CanoScan Flatbed/TPU scanners. The backend implements both the USB in?

   terface and network interface (using Canon's BJNP and MFNP protocols).

   The network interface supports scanners over IPv4 as well as IPv6 (MFNP

   over IPv6 is untested).

   Currently, the following models work with this backend:

      PIXMA E410, E510

      PIXMA G2000, G2010, G2100, G4000

      PIXMA MG2100, MG2200, MG2400, MG2500, MG2900, MG3000, MG3100

      PIXMA MG3200, MG3500, MG3600, MG4200, MG5100, MG5200, MG5300

      PIXMA MG5400, MG5500, MG5600, MG5700, MG6100, MG6200, MG6300

      PIXMA MG6400, MG7100, MG7500, MG7700, MG8200

      PIXMA MP140, MP150, MP160, MP170, MP180, MP190

      PIXMA MP210, MP220, MP230, MP240, MP250, MP260, MP270, MP280

      PIXMA MP360, MP370, MP390

      PIXMA MP450, MP460, MP470, MP480, MP490, MP495

PIXMA MP500, MP510, MP520, MP530, MP540, MP550, MP560

PIXMA MP600, MP600R, MP610, MP620, MP630, MP640

PIXMA MP700, MP710, MP730, PIXMA MP750 (no grayscale)

PIXMA MP800, MP800R, MP810, MP830

PIXMA MP960, MP970, MP980, MP990

PIXMA MX300, MX310, MX330, MX340, MX350, MX360, MX370

PIXMA MX410, MX420, MX470, MX510, MX520, MX530, MX700, MX720

PIXMA MX850, MX860, MX870, MX882, MX885, MX890, MX920, MX7600

PIXMA TR4500

PIXMA TS3100, TS3300, TS5000, TS5100, TS6100, TS6200, TS8000

PIXMA TS8200

PIXUS MP10

imageCLASS MF634Cdw, MF733Cdw

imageCLASS MF3110, MF3240, MF4010, MF4018

imageCLASS MF4120, MF4122, MF4140, MF4150

imageCLASS MF4270, MF4350d, MF4370dn, MF4380dn

imageCLASS MF4410, MF4430, MF4570dw, MF4660, MF4690

imageCLASS MF5730, MF5770, MF6550, MPC200

imageCLASS D420, D480, D530, D570

i-SENSYS MF210, MF230, MF240, MF440, MF620, MF630, MF640

i-SENSYS MF645C, MF730, MF731/733, MF741/743

i-SENSYS MF3010, MF4320d, MF4330d, MF4500, MF4700, MF4800

i-SENSYS MF6100, MF8030, MF8200C, MF8300

imageRUNNER 1020/1024/1025, 1133

CanoScan 8800F, 9000F, 9000F Mark II

CanoScan LiDE 300, 400

MAXIFY MB2000, MB2100, MB2300, MB2700, MB5000, MB5100, MB5400

The following models are not well tested and/or the scanner sometimes hangs and must be switched off and on.

PIXMA MP760, MP770, MP780, MP790

The following models may use the same Pixma protocol as those listed above, but have not yet been reported to work (or not). They are de? clared in the backend so that they get recognized and activated. Feed?

back in the sane-devel mailing list welcome.

PIXMA E400, E460, E470, E480, E500, E560, E600, E610

PIXMA E3100, E3300, E3400, E4200

PIXMA G2020, G2060, G3020, G3060, G7000, G7080

PIXMA MG4100, MG6500, MG6600, MG6800, MG6900, MG8100

PIXMA MP375R, MP493, MP740

PIXMA MX320, MX390, MX430, MX450, MX490, MX710

PIXMA G3000, G3010, G4010, G6000, G6080, G7000, GM4000, GM4080

PIXMA TR7500, TR7530, TR7600, TR8500, TR8530, TR8580, TR8600

PIXMA TR8630, TR9530

PIXMA TS3400, TS5100, TS6000, TS6130, TS6180, TS6230, TS6280, TS6300

PIXMA TS6330, TS6330, TS6380, TS6400, TS7330, TS7400, TS7430, TS8100

PIXMA TS8130, TS8180, TS8230, TS8280, TS8300, TS8330, TS8380, TS9000

PIXMA TS9100, TS9180, TS9500, TS9580

PIXUS MP5, XK50, XK60, XK70, XK80, XK90

imageCLASS MF720, MF810/820, MF5630, MF5650, MF5750, MF8170c

imageCLASS MPC190, D550

i-SENSYS MF110, MF220, MF260, MF410, MF420, MF510, MF520, MF740

i-SENSYS MF5880dn, MF5900, MF6680dn, MF8500C

MAXIFY MB5300

The following models may use partly the same Pixma protocol as other devices listed above, but may still need some work. They are declared in the backend as experimental and need the environment variable PIXMA_EXPERIMENT=1 to get recognized and activated. Snoop logs are re?quired to further investigate, please contact the sane-devel mailing list.

-- none --

The backend supports:

* resolutions of 75, 150, 300, 600, 1200, 2400, 4800, and 9600 DPI (some maybe buggy),

* color and grayscale mode, as well as lineart on certain mod?

els,

* a custom gamma table,

* Automatic Document Feeder, Simplex and Duplex.

* Transparency Unit, 24 or 48 bits depth. Infrared channel on

certain models.

The device name for USB devices is in the form pixma:xxxxyyyy_zzzzz

where x, y and z are vendor ID, product ID and serial number respec?

tively.

Example: pixma:04A91709_123456 is a MP150.

Device names for BJNP/MFNP devices is in the form pixma:aaaa_bbbbb

where aaaa is the scanners model and bbbb is the hostname or ip-adress.

Example: pixma:MF4800_192.168.1.45 is a MF4800 Series multi-function

peripheral.

This backend, based on cloning original Canon drivers protocols, is in

a production stage. Designed has been carried out without any applica?

ble manufacturer documentation, probably never available. However, we

have tested it as well as we could, but it may not work in all situa?

tions. You will find an up-to-date status at the project homepage. (See

below). Users feedback is essential to help improve features and per?

formances.

OPTIONS

Besides "well-known" options (e.g. resolution, mode etc.) backend also

provides the following options, i.e. the options might change in the

future.

The button status can be polled i.e. with scanimage -A.

Button scan is disabled on MAC OS X due to darwin libusb not handling

timeouts in usb interrupt reads, but may work when using the network

protocol.

adf-wait

This option enables and sets the time in seconds waiting for a

document inserted into the Automatic Document Feeder. The maxi?

mum allowed waiting time is 3600 sec (= 1 hour).

button-controlled

This option can be used by applications (like scanadf(1) and scanimage(1)) in batch mode, for example when you want to scan many photos or multiple-page documents. If it is enabled (i.e. is set to true or yes), the backend waits before every scan un? til the user presses the "SCAN" button (for MP150) or the color-scan button (for other models). Just put the first page in the scanner, press the button, then the next page, press the button and so on. When you finished, press the gray-scan button. (For MP150 you have to stop the frontend by pressing Ctrl-C for exam? ple.)

button-update (deprecated)

(write only) In the past this option was required to be set to force reading of the button status for button-1 and button-2. The sane-pixma backend no longer requires this option to be used: if no fresh data is available, it will be now requested automatically from the scanner. This option is left for backward compatibility reasons.

button-1 button-2

(read only) These options will return the value of the respec? tive buttons. value 0 means that the button was not pressed, 1 is returned when the button was pressed. Some scanners with more than two buttons send the button number as target.

original

(read only) Returns the value of the type or size of original to be scanned if the scanner provides that data. Known values of type: 1 = document, 2 = photo, 5 = film. Known values of size: 1 = A4, 2 = Letter, 8 = 10x15, 9 = 13x18, b = auto. Not all scan? ners can provide this data.

target (read only) Returns the value of the target of the scan opera? tion if the scanner provides that data. The values depend on the scanner type. Known values: 1 = save to disk, 2 = save to pdf, 3 = send to email, 4 = send to application or 1 = JPEG, 2 = TIFF,

3 = PDF, 4 = Compact PDF. For some scanners this value is equiv‐
alent to the number of the pressed button. Not all scanners can
provide this data.

scan-resolution

(read only) Returns the resolution of the scan operation if the
scanner provides that data. Known values: 1 = 75 dpi, 2 = 150
dpi, 3 = 300 dpi, 4 = 600 dpi. Not all scanners can provide this
data.

document-type

(read only) Returns the type of the scanned document if the
scanner provides that data. Known values: 1 = Document, 2 =
Photo, 3 = Auto scan. Not all scanners can provide this data.

adf-status

(read only) Returns the status of the document feeder if the
scanner provides that data. Known values: 1 = ADF empty, 2 = ADF
filled. Not all scanners can provide this data.

adf-orientation

(read only) Returns the scan orientation of the medium scanned
from ADF if the scanner provides that data. Known values: 1 =
Portrait, 2 = Landscape. Not all scanners can provide this data.

FILES

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

The static library implementing this backend.

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

The shared library implementing this backend (present on systems
that support dynamic loading).

/etc/sane.d/pixma.conf

The backend configuration file (see also description of
SANE_CONFIG_DIR below).

The file contains an optional list of networked scanners using
the BJNP or MFNP protools (See below for datails on networking
support for scanners). Normally only scanners that cannot be
auto-detected because they are on a different subnet shall be

listed here. If you do not use Linux and your OS does not allow enumeration of interfaces (i.e. it does not support the getifad‐drs() qfunction) you also may need to add your scanner here as well.

Scanners shall be listed in the configuration file as follows:

    <method>://<host>[:port][/timeout=<value>]

where method indicates the protocol used (bjnp is used for inkjet multi-functionals and mfnp is used for laser multi-func‐tionals).

host is the hostname or IP address of the scanner, e.g. bjnp://10.0.1.4 for IPv4, bjnp://[2001:888:118e:18e2:21e:8fff:fe36:b64a] for a literal IPv6-address or bjnp://myscanner.mydomain.org for a hostname.

The port number is optional and in normally implied by the method. Port 8610 is the standard port for mfnp, 8612 for bjnp.

A scanner specific timeout value for the network protocol can be set using the bjnp-timeout parameter. The value is in ms.

Define scanners each on a new line.

More globally applicable timeouts can be set using the bjnp-timeout parameter as follows:

    bjnp-timeout=<value>

A timeout defined using bjnp-timeout will apply to the following scanner definitions in the file. If required the bjnp-timeout setting can be defined multiple times, where each setting will apply only to the scanners that follow the setting. The last setting is used for the auto discovered scanners. If not ex‐plicitly set, the default 1000ms setting will apply.

Setting timeouts should only be required in exceptional cases.

If so desired networking can be disabled as follows:

- If the first non-commented line contains networking=no all networking will be disabled. This will cause all further statements in the configuration file to be ig‐nored.

- A line that contains auto_detection=no will cause auto-detection to be skipped. Explicitly defined network scan?ners will still be probed.

USB SUPPORT

USB scanners will be auto-detected and require no configuration.

NETWORKING SUPPORT

The sane-pixma backend supports network scanners using the so called Canon BJNP and MFNP protocols.

Canon seems to be dropping support for these protocols in recent scan?ners. To verify if your scanner supports one of these protocols, check the content of the _scanner._tcp service entry in mDNS/DNS-SD (using for example avahi-discover(1)). If that does not list port 8610 or 8612 your scanner probably does not support the mfmp or bjnp protols. Both IPv4 and IPv6 are supported, but IPv6 is as yet untested with MFNP. Please report your results on the mailing list.

Configuration is normally not required. The sane-pixma backend will auto-detect your scanner if it is within the same subnet as your com?puter if your OS does support this.

If your scanner can not be auto-detected, you can add it to the sane-pixma configuration file (see above).

FIREWALLING FOR NETWORKED SCANNERS

The sane-pixma backend communicates with port 8610 for MFNP or port 8612 for BJNP on the scanner. So you will have to allow outgoing traf?fic TO port 8610 or 8612 on the common subnet for scanning.

Scanner detection is slightly more complicated. The sane-pixma backend sends a broadcast on all direct connected subnets it can find (provided your OS allows for enumeration of all network interfaces). The broad?cast is sent FROM port 8612 TO port 8610 or 8612 on the broadcast ad?dress of each interface. The outgoing packets will be allowed by the rule described above.

Responses from the scanner are sent back to the computer TO port 8612. Connection tracking however does not see a match as the response does not come from the broadcast address but from the scanners own address.

For automatic detection of your scanner, you will therefore have to al?

low incoming packets TO port 8612 on your computer. This applies to

both MFNP and BJNP.

So in short: open the firewall for all traffic from your computer to

port 8610 (for MFNP) or 8612 (for BJNP) AND to port 8612 (for both BJNP

and MFNP) to your computer.

With the firewall rules above there is no need to add the scanner to

the pixma.conf file, unless the scanner is on a network that is not di?

rectly connected to your computer.

ENVIRONMENT

SANE_DEBUG_PIXMA

If the library was compiled with debug support enabled, this en?

vironment variable controls the debug level for this backend it?

self. Higher value increases the verbosity and includes the in?

formation printed at the lower levels.

0 print nothing (default)

1 print error and warning messages (recommended)

2 print informational messages

3 print debug-level messages

4 print verbose debug-level messages

11 dump USB traffic

21 full dump USB traffic

SANE_DEBUG_BJNP

If the library was compiled with debug support enabled, this en?

vironment variable controls the debug level for the BJNP and

MFNP network protocols for this backend. Higher value increases

the verbosity and includes the information printed at the lower

levels.

0 print nothing (default)

1 Print error and warning messages (recommended)

2 Print high level function tracing information

3 Print more detailed protocol tracing information

4 Print protocol headers

5 Print full protocol contents

PIXMA_EXPERIMENT

Setting to a non-zero value will enable the support for experi?

mental models. You should also set SANE_DEBUG_PIXMA to 11.

SANE_CONFIG_DIR

This environment variable specifies the list of directories that

may contain the configuration file. Under UNIX, the directories

are separated by a colon (`:'), under OS/2, they are separated

by a semi-colon (`;'). If this variable is not set, the config?

uration file is searched in two default directories: first, the

current working directory (".") and then in /etc/sane.d. If the

value of the environment variable ends with the directory sepa?

rator character, then the default directories are searched after

the explicitly specified directories.   For example, setting

SANE_CONFIG_DIR to "/tmp/config:" would result in directories

tmp/config, ., and /etc/sane.d being searched (in this order).

SEE ALSO

sane(7), sane-dll(5), scanimage(1), scanadf(1), gamma4scanimage(1),

getifaddrs(3)

In case of trouble with a recent Pixma model, try the latest code for

the sane-pixma backend, available in the Sane git repository at:

https://gitlab.com/sane-project/backends.git

You can also post into the Sane-devel mailing list for support.

AUTHORS

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We would like to thank all testers and helpers. Without them we could

not be able to write subdrivers for models we don't have. See also the

project homepage.