

Sane Overview

Scanning

SUCCESS

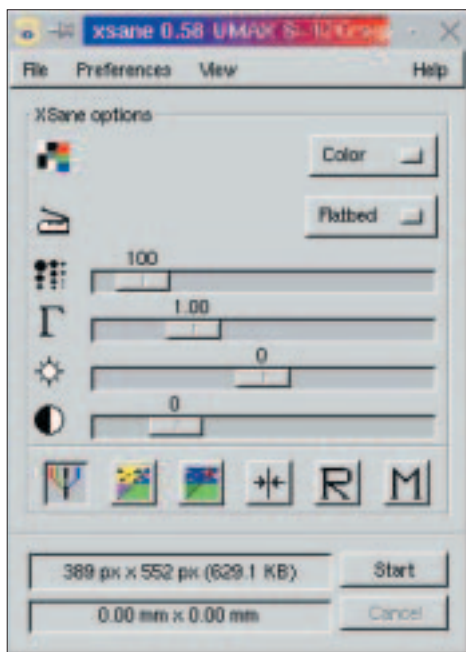
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SANE, an acronym for “Scanner Access Now Easy” and is an application programming interface (API) that provides standardised access to any raster image scanner hardware. The SANE API is public domain and its discussion and development is open to everybody, which is a mark of its success.

The most important thing that this article can do is try and dispel the belief that you can not get scanners to work with Linux. It is very true that very few scanner manufactures offer any support to the Linux community for their products, but this hasn't stopped a dedicated band of developers produce Sane, a software system that is allowing more and more scanners to be used. It is now becoming much more likely that you will be able to find a scanner that will work with a Linux system and, possibly more important, one that you can afford.

Windows systems, and Macs for that matter

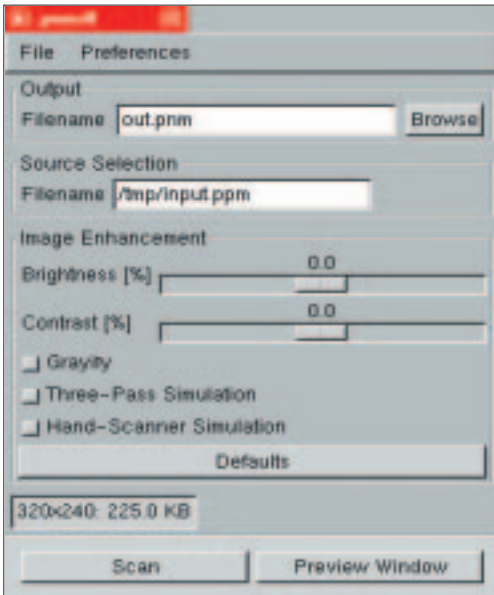
often refer to TWAIN as their ‘standard’, but just because a scanner is said to follow this standard doesn't mean it will work with Linux. This TWAIN standard turns out to be no more than a set of rules, not a very fixed set at that, which defines what a scanner driver should do to be compatible, but not how. The scanner manufacturer provide TWAIN compatible drivers that, in effect, describe how the scanner is working to the application program, the scanning application software that the user sees. This means the driver must be closely linked to the application software.



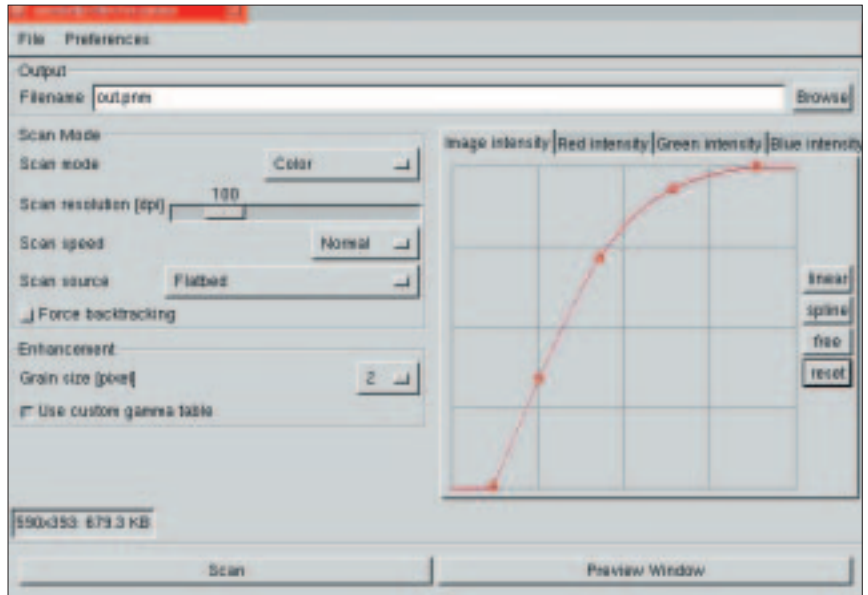
If XSane is started as a Gimp plugin, the scanned image is automatically loaded into the Gimp.



One of the list of back-ends at the SANE site. Don't worry, not all the back-ends are alpha release. Note how the Siemens scanner falls under the Agfafocus back-end.



Capturing data with xscanimage



Gamma table editor

SANE is designed to be more universal, as their web page puts it “The value of such a universal interface is that it allows writing just one driver per image acquisition device rather than one driver for each device and application. So, if you have three applications and four devices, traditionally you’d have had to write 12 different programs. With SANE, this number is reduced to seven: the three applications plus the four drivers. Of course, the savings get even bigger as more and more drivers and/or applications are added.”

To do this SANE splits the task of bringing hardware and application program together into two, the Front-end and Back-end.

A SANE front-end can either be a scanning application in its own right, or a plug-in to another application. It deals with the user side of the scanning operation.

A SANE back-end is the nearest we get to having a driver for a specific scanner. It understands how the scanner works and handles the requests that come from the front-end, which talks to the application. The back-end is also responsible for retrieving the scanned image from the scanner, and converting it to the correct format so that the front-end can handle it. The important bit is that to get a specific scanner to work, a SANE back-end must be available for it. This is why the role of the manufacturer is important, if they won’t say how their scanners

Will my scanner be supported

It’s not practical to give the full list of supported scanners here, because of the reliance on back-ends and that it’s changing, growing daily. Some of the better supported scanners are the Epson Perfection range in both SCSI and USB forms, the Plustek OpticPro parallel port range, Umax SCSI and Agfa USB Snapscan range.

works then a back-end can’t easily be written for it. It’s been found that some of the back-ends will support other models of scanner and sometimes even different manufactures. This means that the SANE compatibility list shows scanners listed by back-end rather than by manufacturer.

All of this is true, not just for scanners, but for similar devices like hand-held scanner, video- and still-cameras, frame-grabbers.

SCSI, Parallel and USB scanners are all dealt with differently by SANE, so they will all have their own back-ends, something to look out for when checking compatibility. SCSI scanners do seem to be the best supported, but with the introduction and improvements with USB support in the Linux kernel, the number of USB scanners is increasing steadily. And this marks the big turn around, SCSI devices will always be the most expensive option, but with the growing availability of USB scanners working with Linux mean that soon, no user will have to do without the privilege of scanning images.

Once you have downloaded and installed the Sane package you need to find what device you have connected. Use the command

```
scanimage -list-devices
```

This then returns a list of available devices. Your scanner will be listed first but extra devices pnm:1 (Portable aNyMap) will also be listed which act as virtual devices for file manipulation.

To start scanning you now need to run

```
xscanimage &
```

Different devices have differing properties that allow us to change the captured data such as gamma adjustment.

Info

SANE homepage

<http://www.mostang.com/sane/>

Supported USB scanners

<http://www.buzzard.org.uk/jonathan/scanners-usb.html>

Supported parallel scanners

<http://www.buzzard.org.uk/jonathan/scanners.html>