



Image Scan! for Linux
User's Guide

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Contents

Contents

Introduction

Before Using Image Scan! for Linux	1
About the License	2
Cautions and Notes	2
About This Guide	2
System Requirements	3

Chapter 1 Installing the Software

Installing Image Scan! for Linux	4
Uninstalling Image Scan! for Linux	6
Configuring USB Scanner Devices	8

Chapter 2 Using Image Scan! for Linux

Overview on Scanning	11
Running Image Scan! for Linux	12
From the command line	12
From the GIMP graphic software	13
Scan Selector dialog box	14
Main Window	15
Document Settings	22
Adjust Settings	28
Scanning an Image	32
Scanning to a File	32
Scanning to a Printer	35

Chapter 3 Configuring SANE Network

Setting Up the Client	36
Setting Up the Server.	37
Troubleshooting.	39

Chapter 4 Setting Network Plug-in

Installing Network Plug-in	41
Uninstalling Network Plug-in	42
Setting Network Plug-in	42

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Introduction

Image Scan! for Linux provides a graphical user-interface to directly control all of the features of your Epson scanner. With this software you can scan images in color or black and white and obtain professional quality results. In addition, Image Scan! for Linux supports network usage, and can also control a scanner that is connected to a computer on the network.

In this manual, a computer running Image Scan! for Linux is called “the client”, and the computer that is connected to the scanner is called “the server”.

Before Using Image Scan! for Linux

Before using Image Scan! for Linux, check the following:


- The SANE package version 1.0.3 or later must be installed before installing Image Scan! for Linux.
- When using Image Scan! for Linux on the network, you need to configure the SANE network on the client and server. For detailed information, see Chapter 3, “Configuring SANE Network.”
- For information on how to connect from Image Scan! for Linux to a scanner that is directly attached to the network, see Chapter 4, “Setting Network Plug-in.”

About the License

Image Scan! for Linux contains sources covered by the following licenses:

- GNU General Public License
- GNU Lesser General Public License
- AVASYS Public License


Cautions and Notes

 *contain important information and useful tips on using this software.*

About This Guide

This guide contains information on using Image Scan! for Linux.

For information about your scanner, see the manual shipped with your scanner.

-
- 
- *Some screen shots in this guide may be different from yours. This difference does not change the instructions.*
 - *Commands are indicated in fixed width font.*
-

System Requirements

Go to the website (http://avasys.jp/english/linux_e/index.html) for information on supported operating systems and scanners.

Chapter 1

Installing the Software

This chapter explains how to install and uninstall Image Scan! for Linux.

Installing Image Scan! for Linux

There are two packages for installing Image Scan! for Linux: core package and data package. To install Image Scan! for Linux, install data package, and then install core package. For some models with plug-in package, after installing data package and core package, install the plug-in package.

In most graphical environments, just double-click the Image Scan! for Linux binary package icon to install it. If this does not work for you, install it from a command line with the least common denominator tools as follows:

1. Log in as root.
2. Execute the following command to install Image Scan! for Linux.

For Debian packages:

2-1. Installing data package

```
# dpkg --install iscan-data_${ver}-${rel}_all.deb
```

2-2. Installing core package

```
# dpkg --install iscan_${ver}-${rel}_${arch}.deb
```


2-3. Installing plug-in package (if provided)

```
# dpkg --install iscan-plugin-$scanner_$ver-$rel_$arch.deb
```

or

```
# dpkg --install esci-interpretter-$scanner_$ver-$rel_$arch.deb
```

For RPM packages:

2-1. Installing data package

```
# rpm --upgrade iscan-data-$ver-$rel.noarch.rpm
```

2-2. Installing core package

```
# rpm --upgrade iscan-$ver-$rel.$arch.rpm
```

2-3. Installing plug-in package (if provided)

```
# rpm --upgrade iscan-plugin-$scanner-$ver-$rel.$arch.rpm
```

or

```
# rpm --upgrade esci-interpretter-$scanner-$ver-$rel.$arch.rpm
```

Note

- *Abbreviations used for package representations mean as follows:*
 - \$ver* : package version
 - \$rel* : package release number
 - \$arch* : package architecture
 - *If the message “error: failed dependencies” appears during installation of Image Scan! for Linux, quit the installation. Install the necessary packages listed in the message, and then install Image Scan! for Linux again.*
 - *When using the scanner on the network, Image Scan! for Linux must be installed on both the server connected to a scanner and client computers.*
 - *The SANE package version 1.0.3 or later must be installed before installing Image Scan! for Linux.*
(<http://sane.alioth.debian.org/>)
 - *For help on installation of Debian and RPM binary packages, refer to your distribution’s documentation.*
-

Uninstalling Image Scan! for Linux

To uninstall Image Scan! for Linux, uninstall core package, and then uninstall data package. For some models with plug-in package, uninstall plug-in package first. Follow the steps below to uninstall Image Scan! for Linux.

1. Log in as root.
2. Execute the following command to uninstall Image Scan! for Linux.

For Debian packages:

2-1. Uninstalling plug-in package

Note: Execute the following command only if you installed plug-in package.

```
# dpkg --remove iscan-plugin-$scanner
```

or

```
# dpkg --remove esci-interpretter-$scanner
```

2-2. Uninstalling core package

```
# dpkg --remove iscan
```

2-3. Uninstalling data package

```
# dpkg --remove iscan-data
```

For RPM packages:

2-1. Uninstalling plug-in package

Note: Execute the following command only if you installed plug-in package.

```
# rpm -e iscan-plugin-$scanner
```

or

```
# rpm -e esci-interpreter-$scanner
```

2-2. Uninstalling core package

```
# rpm -e iscan
```

2-3. Uninstalling data package

```
# rpm -e iscan-data
```

Configuring USB Scanner Devices

Using your USB scanner device with “Image Scan! for Linux” or other SANE frontend could be quite a bit of a hassle to set up. With the release of version 1.14.0 setting things up has been automated for most situations. If your system has the `libusb` and `hotplug` packages installed, chances are that just installing `iscan` is enough to get going.

Below, we will try to explain how to get your scanner to work in those cases that just installing is not quite enough.

But before that, we would like to point out that the kernel’s scanner module was declared obsolete as of kernel version 2.6.0 and removed from the kernel altogether in version 2.6.3. We recommend you switch to using `libusb` if you have not done so already.

Note

More information regarding the kernel’s scanner module and `libusb` is available from the `sane-usb(5)` manual page.

```
$ man sane-usb
```

Using `libusb`

With the addition of `hotplug` support in version 1.14.0 this has become the default. If `hotplug` is installed on your system, then you should not have to configure anything. Just connect your scanner, turn it on and start `iscan`.

When you don’t have `hotplug` installed on your system, you may have to change the access permissions for the device in order to scan as a normal user. Typical symptoms of this case are communication errors when scanning as a normal user and no trouble at all when scanning as root. If this happens to you, do the following to fix things:

1. run `sane-find-scanner` to find the USB connection

```
$ sane-find-scanner | grep 0x04b8
found USB scanner (vendor=0x04b8,
product=0x0110) at libusb:001:002
```

From the sample output above the USB connection is at 001/002.

2. change the permissions with

```
# chmod 0666 /proc/bus/usb/001/002
```

Of course, replace the numbers with those you found in step 1.

Note that you will have to do this every time you (re)connect or power cycle your USB scanner or reboot your computer.

If you want to check whether you are using `libusb`, just have a look at the `/etc/sane.d/epkowa.conf` configuration file. It should have an

```
usb
```

line (without a leading `#`). Specifically, the

```
# usb /dev/usb/scanner0
```

line (and the lines like it) should all start with a `#`.

Note

- *It may happen that your kernel decides to load its scanner module anyway when you connect your USB scanner. This may interfere with the use of libusb, so we recommend that you rename (or remove) the module. The scanner module is typically installed as one of*

```
/lib/modules/$version/kernel/drivers/usb/  
scanner.o  
/lib/modules/$version/kernel/drivers/usb/  
image/scanner.ko
```

- *You can check whether the scanner module is loaded with the following command:*

```
# lsmod | grep scanner
```

If it was inadvertently loaded, you may be able to unload it with one of:

```
# modprobe -r scanner  
# rmmmod scanner
```

but note that with 2.6 kernels this may not work and even hang. In those cases, rename (or remove) the module and reboot.

Chapter 2

Using Image Scan! for Linux

Image Scan! for Linux directly controls all of the features of your Epson scanner. With this software you can scan images in color or black and white and obtain professional quality results.

Overview on Scanning

You can scan an image with Image Scan! for Linux using the following steps.

1. Make sure the scanner and the computer connected to the scanner are turned on.
2. Place a document on the scanner. See the user's guide of the scanner.
3. Run Image Scan! for Linux on your computer. See "Running Image Scan! for Linux" on page 12.
4. If the Scan Selector dialog box appears, select the scanner from the list. Click OK. See "Scan Selector dialog box" on page 14.

The main window appears.

5. On the Document tab, make settings such as document source, image type, and resolution. See "Document Settings" on page 22.
6. Click the Preview button to preview the full page. See "Preview button" on page 17.

7. Create a marquee of the image you want to scan. See “Marquee” on page 17.
8. Make the color adjustment settings.
Click the Auto Exposure button to automatically activate and optimize the image enhancement for image source. Or, click the Adjust tab, and then set the color adjustments as you prefer. See “Auto Exposure button” on page 18 or “Adjust Settings” on page 28.
9. Select a destination to send the scanned image. You can either save a scanned image as a file or send it directly to a printer. See “Destination list box (when in normal mode)” on page 19.
10. Click the Scan button. The scanned image is saved as a file or sent to the printer. See “Scanning an Image” on page 32.

Running Image Scan! for Linux

You can start Image Scan! for Linux either from the command line or through the GIMP.

From the command line

At the command prompt, execute the following command to start Image Scan! for Linux.

```
$ iscan
```

Image Scan! for Linux starts. If more than one scanner are connected to the network, the Scan Selector dialog box appears. See “Scan Selector dialog box” on page 14.

From the GIMP graphic software

You can also start Image Scan! for Linux from the GIMP. In this case, the scanned image is transferred to the GIMP for further image manipulation instead of a file or printer.

As of version 1.15.0, iscan is automatically registered as a GIMP plug-in if you install the binary package. In case it didn't (because you built from source for example), you can register it yourself with the following command

```
$ ln -s /usr/bin/iscan ~/.gimp-2.2/plugin-ins/
```

Adjust the version number to match the version of the GIMP that you use.

Once iscan is registered as a plug-in, you can start it via the entry in the Xtns menu under the Acquire Image section.

Select Create from the File menu of GIMP, and then select Scanning (iscan).

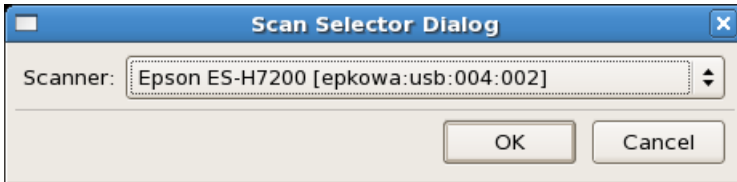
Note: The menu configuration may differ depending on which version of GIMP that

Image Scan! for Linux starts.

If more than one scanner is connected to the network, the Scan Selector dialog box appears.

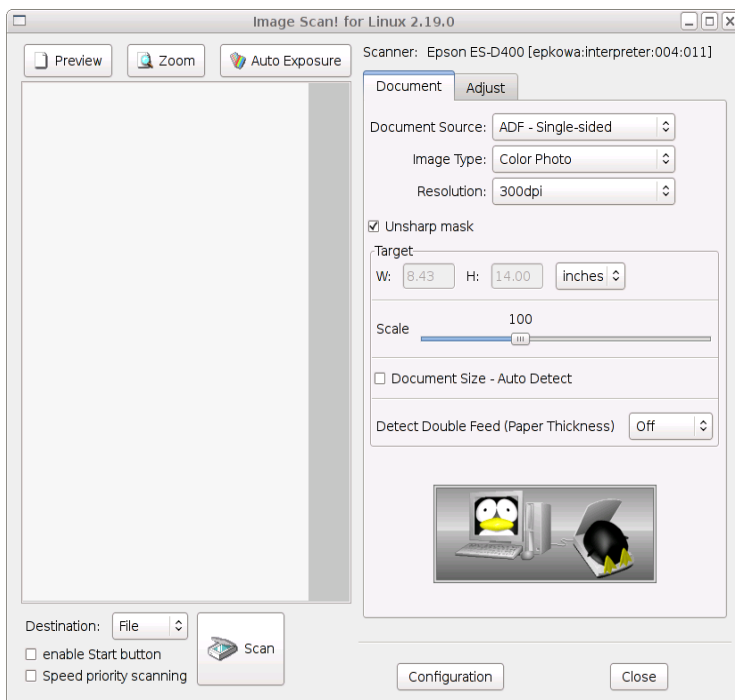
Scan Selector dialog box

If more than one scanner are connected to the network, the Scan Selector dialog box appears when you run Image Scan! for Linux. Select a scanner you want to use, and then click **OK**.

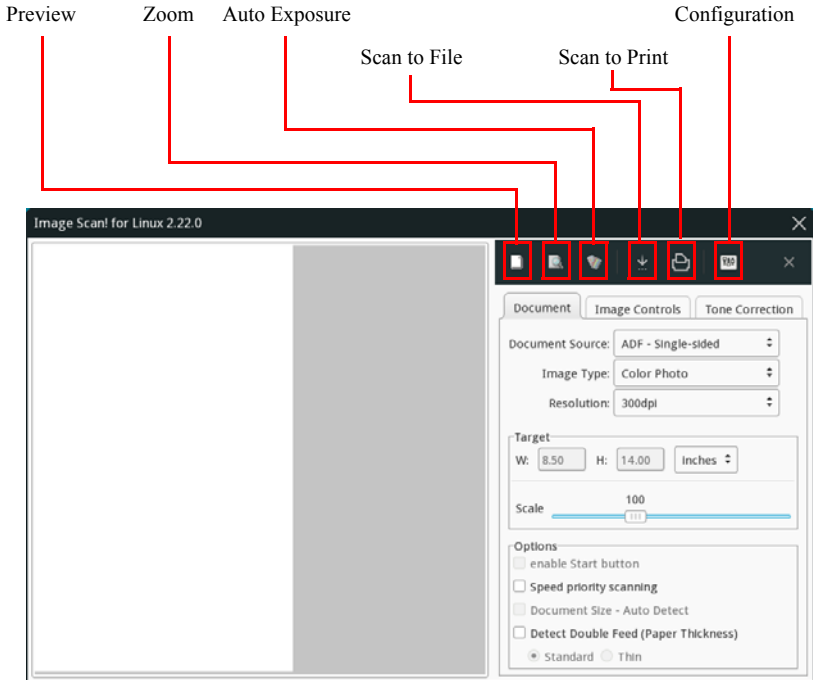


Main Window

The main window allows you to make the following settings.



When the height of the computer screen is 768 pixels or less, the main window of compact GUI mode appears. The functions are the same as for normal mode, but the operating procedures and screen configuration differ.



Preview button

Before you scan an image, you can use the Preview window to see the effects of most Image Scan! for Linux settings, and to make additional image adjustments. Image Scan! for Linux can automatically adjust and optimize the exposures and colors of scanned images during previewing. You can also use a marquee (frame) to scan only selected area of an image.

Note

- *When using the Automatic Document Feeder, the document is ejected after previewing. To scan documents, set documents to be scanned in the Automatic Document Feeder including the ejected documents.*
 - *For some scanner models, the size of paper captured is detected automatically to become Maximum Scanning Area. The value becomes the maximum size when it is set as a default or the detected paper size is unknown.*
-

Marquee

A marquee is a sizeable frame that determines what part and how much of an image will be scanned.

To create a marquee, move the pointer over the image in the Preview window. The pointer becomes a set of cross-hairs. Hold down the mouse button and drag the cross-hairs over an area of the image, then release the mouse button to create a marquee.

To move the marquee, place the mouse pointer within the marquee, and drag the marquee anywhere in the Preview window.

To resize the marquee, place the mouse pointer on the edge of the marquee and drag an arrow.

To delete the marquee, click the Preview window.

Zoom button

Click the Zoom button to zoom in on a selected area of the image. Use a marquee to select the part of the image you want to zoom and then click this button.

Note

- *The Zoom button is dimmed if there is no preview image or no marquee in the preview window.*
 - *When using the Automatic Document Feeder, the document is ejected after previewing. To scan documents, set documents to be scanned in the Automatic Document Feeder including the ejected documents.*
-

Auto Exposure button

Click the Auto Exposure button to automatically optimize the exposure for an image. The Gamma, Highlight, and Shadow settings in the Adjust dialog box are automatically set.

Note

The Auto Exposure button is dimmed if there is no preview image or if Line Art is selected for Image Type.

Scanner

Displays the scanner name you have selected.

If you want to use a different scanner on the network, you need to quit Image Scan! for Linux and then run it again. Then select the scanner in the Scan Selector dialog box.

Note

The scanner name is not displayed in compact GUI mode.

Destination list box (when in normal mode)

You can specify where the scanned image is to be sent: either File or Printer.

When you select Printer, the scanned image is sent to the default printer. If you want to use a different printer, click the Configuration button to specify the printer.

Note

If you start Image Scan! for Linux from the GIMP, this setting is dimmed.

Scan to Print (when in compact GUI mode)

Click the Scan to Print button to scan and print the image. Printing is performed with the printer registered as the default printer. If you want to use another printer for printing, click the Configuration button and specify the printer.

Start Button check box

When you check this box, the scanner will not perform a scan until you press the Start Button of your scanner. This is convenient if your scanner is, for example, located in another room, or you want to make several scans in a row (not unlike what happens when scanning from an ADF unit).

Note

- *For scanners that do not support the Start Button, this check box is not displayed.*
 - *In compact GUI mode, this check box is displayed in the Document tab.*
-

Speed priority scanning

Select this check box when scanning speed is more important than image quality.

Note

- *When your scanner does not support this function, the scanning speed will not change.*
 - *In compact GUI mode, this check box is displayed in the Document tab.*
-

Scan button (when in normal mode)

Click the SCAN button to start scanning. For detailed information, see “Scanning an Image” on page 32.

Scan to File (when in compact GUI mode)

Click the Scan to File button to save the scanned image to file. After you click this button, select the save directory and file name, and then start scanning. For detailed information, see “Scanning an Image” on page 32.

Configuration button

When you select Printer for the destination, the scanned image is sent to the default printer. If you want to use a different printer, click the Configuration button to specify the printer.

Print Command

Specify a print command (up to 256 characters). When using an Epson printer, we recommend you install Photo Image Print System for high quality printing.

Your print system needs to be able to handle the PNG format. Both the Common Unix Print System (CUPS) and Photo Image Print System, versions 1.3.1 and later, do this by default.

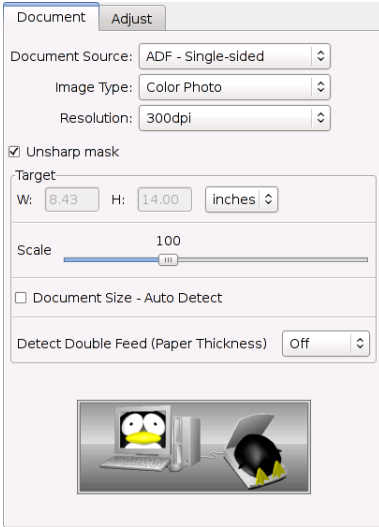
Note

If you start Image Scan! for Linux from the GIMP, the Configuration button is dimmed.

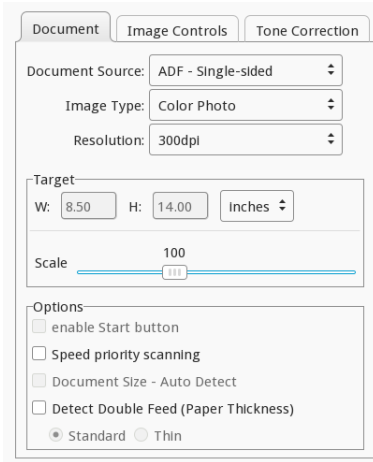
Document Settings

In the Document dialog box, you can make settings such as document source, image type, and output resolution.

when in normal mode



when in compact GUI mode



Document Source

The Document Source list contains the following settings: Flatbed, TPU for Neg.Film, TPU for Pos.Film, ADF - Single-sided, and ADF - Double-sided. When scanning a reflective document placed on the document table of the scanner, leave Document Source set to Flatbed.

Flatbed

Select Flatbed to scan reflective document.

TPU for Neg.Film/TPU for Pos.Film

Select one of them depending on the type of film (negative or positive) you are scanning. Select TPU for Neg.Film for negative film and TPU for Pos.Film for positive film.

ADF - Single-sided

Select ADF - Single-sided when using the ADF (Auto Document Feeder) to load your documents and scan only one side of your document pages.

ADF - Double-sided

Select ADF - Double-sided when using the ADF (Auto Document Feeder) to load your documents and scan both sides of your document pages.

Note

- *TPU for Neg.Film and TPU for Pos.Film are disabled if Transparency Unit is not connected to your scanner.*
 - *ADF - Single-sided and ADF - Double-sided do not appear if Automatic Document Feeder is not connected to your scanner. If you are using a scanner that does not support the ADF - Double-sided function, you cannot select ADF - Double-sided.*
-

Image Type

The Image Type list contains the following settings: Color Photo, Color Document, Black & White Photo, Black & White Document, and Line Art.

Color Photo

24-bit color

This setting is useful when scanning color photos.

Color Document

24-bit color

This setting is useful when scanning magazines or catalogs in color.

Black & White Photo

8-bit gray

This setting is useful when scanning black and white photos.

Black & White Document

8-bit gray

This setting is useful when scanning magazines or catalog in black and white.

Line Art

Black and white

This setting is useful when scanning characters-only documents or line drawings without coloring.

Note

If Document Source is TPU for Neg.Film or TPU for Pos.Film, Line Art is dimmed.

Resolution

Resolution is the indication of how finely an image is resolved into pixels. It can be measured in dots per inch (dpi).

When you specify a high resolution, the number of pixels of the data increases and the scanned image becomes fine in texture. Increasing the resolution causes the data size to increase. Specify a suitable resolution according to the scanning purpose.

Note

The range of resolution depends on your scanner.

Unsharp mask check box

You can improve the sharpness of an image by selecting the Unsharp mask check box.

Note

- *If Image Type is Line Art, this check box is dimmed.*
 - *In compact GUI mode, this check box is displayed in the Document tab. For detailed information, see “Image Controls (Image Controls tab when in compact GUI mode)” on page 30.*
-

Target

W (width) and H (height)

You can confirm the size of the output image. The width and height appear in the selected unit of measurement. You can change the image area in the Preview window by creating a marquee.

Units

Select a unit of measurement: inches, pixels, or cm.

Scale slider

An image can be reduced or enlarged by moving the scale slider. The range of possible reduction or enlargement varies depending on the current resolution.

Document Size - Auto Detect

This setting automatically determines the size of your documents and scans them in an appropriate size. When this check box is selected, the size that you specify in the Preview window will be ignored.

Note

This check box is dimmed if your scanner does not support this function or when using TPU for the document source.

Focus

You can specify the focus position. The default focus position with a flatbed document source is 0.0 and the TPU document source is 2.5.

Note

The focus setting appears for scanners that have an adjustable focusing mechanism.

Detect Double Feed (Paper Thickness)

This function stops scanning if a double feed occurs.

To enable the Detect Double Feed function, select the paper thickness from Standard/Thin. To disable the Detect Double Feed function, select Off.

Note

- *The Detect Double Feed (Paper Thickness) option only appears when using a scanner that supports the function.*
- *If the Detect Double Feed function does not work correctly, select Standard or Thin depending on the situation below.*

Standard:

Select this option when the sheets are fed correctly but scanning stops while Thin is selected.

Thin:

Select this option when a double feed occurs but scanning does not stop while Standard is selected.

- *The scanned file data is deleted if scanning to multiple page file is stopped by the Detect Double Feed function. You will need to reload all the sheets and try again.*
-

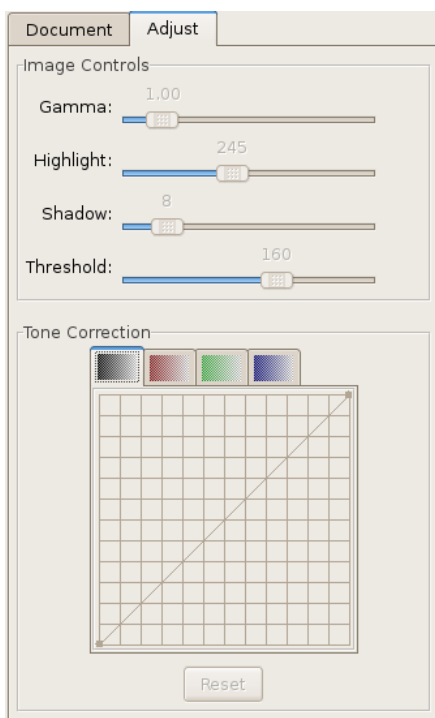
Adjust Settings

In the Adjust dialog box, you can modify the brightness and tone correction settings.

Note

If there is no preview image, all of the settings are dimmed.

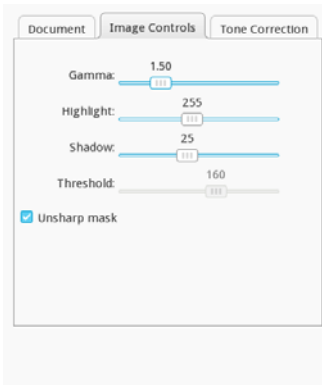
when in normal mode



The functions displayed on the Adjust tab in normal mode are displayed split into the Image Controls tab and Tone Correction tab in compact GUI mode.

when in compact GUI mode

Image Controls tab



Tone Correction tab

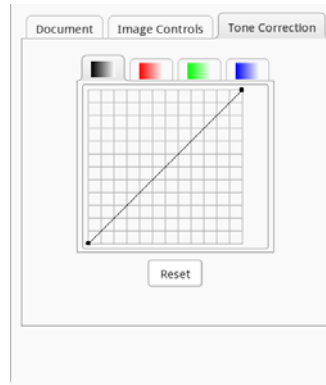


Image Controls (Image Controls tab when in compact GUI mode)

Gamma

Gamma is the difference in contrast between the light tones and dark tones of an image. Changes in the gamma level only affect mid-tones, and can be effective for bringing out details normally hidden in shadow or highlight. To change the values, move the slider left or right. When Image Type is Line Art, the Gamma control is dimmed.

Highlight

You can adjust the brightness in the lighter parts of an image. If the value is decreased, the image becomes brighter; if the value is increased, the image becomes darker. To change the values, move the slider left or right.

When Image Type is Line Art, the Highlight control is dimmed.

Shadow

You can adjust the darkness in the darker parts of an image. If the value is decreased, the image becomes brighter; if the value is increased, the image becomes darker. To change the values, move the slider left or right.

When Image Type is Line Art, the Shadow control is dimmed.

Threshold

You can adjust the threshold value of an image. The threshold is what allows the scanner to distinguish between an image and its background. Since the best threshold depends on the document condition, find the best value by moving the slider left or right.

When Image Type is Color Photo or Black & White Photo, the Threshold control is dimmed.

Note

You can configure the Unsharp mask setting in compact GUI mode. For detailed information, see “Unsharp mask check box” on page 25.

Tone Correction (Tone Correction tab when in compact GUI mode)

Channel

Click a colored button you want to adjust. When the left button next to the red/green/blue color set is selected, your adjustments affect all of the three colors. Selecting one of the other buttons allows you to adjust red, green, or blue individually.

Tone curve editor

You can adjust the tone curve, which helps to ensure well-balanced coloring of the image. The tone curve editor allows you to change the shape of the tone curve. The horizontal axis is the brightness of the original (input value), and the vertical axis is the brightness of the scanned image (output value).

The tone curve editor has two fixed points: (0, 0) and (255, 255). In addition, you can create eleven fixed points inside the tone curve editor. To create a fixed point, move the mouse pointer into the tone curve editor. The pointer becomes a set of cross-hairs. Click the location you want to select as the fixed point. The point you click becomes a new fixed point.

The black square appears on the fixed point, indicating that it is the current fixed point that you most recently adjusted.

When the mouse pointer is placed near the fixed point, it changes to an arrow allowing you to move the point. Select the fixed point you want to move and then drag it.

To delete a fixed point, select it with an arrow. Drag and drop the point out of the grid.

Reset button

Click the **Reset** button to return the Tone Correction settings to their default values.

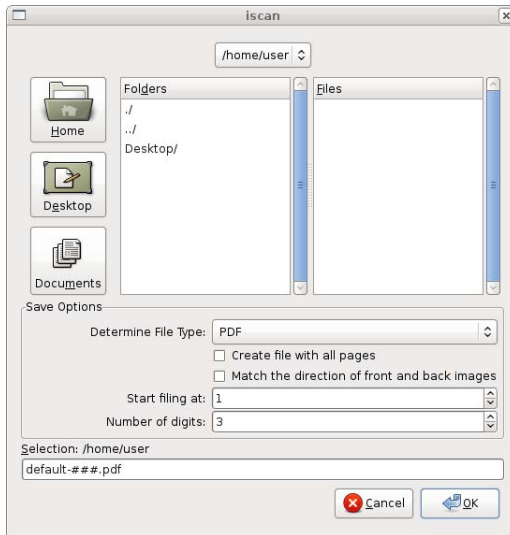
Scanning an Image

You can either save a scanned image as a file or send it directly to a printer. To save a scanned image as a file, see “Scanning to a File” on page 32; to print a scanned image on a printer, see “Scanning to a Printer” on page 35.

Scanning to a File

When you select File in the Destination list box and then click the SCAN button in the main window, the File Save Settings dialog box appears. Use the File Save Settings dialog box to save a scanned image as a file. You can specify an image format and a file name.

For scanning using the Automatic Document Feeder, you can name files with sequential numbers. The default format is “default-###.pnm” where ### stands for sequential numbers set in the Start filling at list box and the Number of digits list box.



The screen shot is when ADF is selected for document source.

Location

Indicates the directories where image files are saved.

Determine File Type

Select a file type to be saved, for example PNM, PNG, or JPEG.

Create file with all pages

When you select PDF or TIFF for the file format, you can save multiple pages to one file. If checked, the following two options will be disabled.

Match the direction of front and back

This item appears when ADF - Double-sided is selected for the Document Source and you select PDF for the file format. After scanning both sides of the document, rotate the image of the back side 180 degrees. As a result, you can match the direction of the front and back sides of a document.

Start filing at

This menu appears if ADF is selected for the document source or the Start button is enabled. Specify a number to be added to the end of the file name. The number will increase by one for each subsequent file.

Number of digits

This menu appears if ADF is selected for the document source. Specify the number of digits for the sequential number.

Note

The digit increases as the sequential number exceeds the number of digit. For example, if the number of digits is set to 1 and the sequential number comes to 9, the number of digits becomes 2 and the next sequential number becomes 10.

Save file edit box

Specify a file name for the scanned image.

Scanning to a Printer

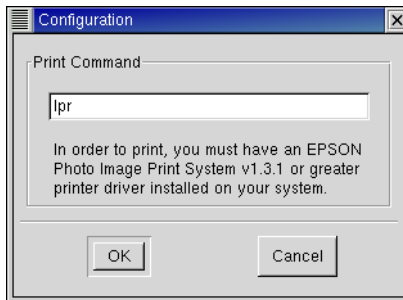
You can send the scanned image to the printer specified in the Configuration dialog box. Follow the steps below.

Note

To print the scanned image on an Epson printer, we recommend you install Photo Image Print System Ver. 1.3.1 or later for high quality printing. The latest version of Photo Image Print System is available at: <http://www.avasys.jp/>

1. Modify the settings as you prefer in the main window.
2. Select Printer in the Destination list box.
3. If you are not using the default printer, click the Configuration button and then enter the print command. Click OK.

For example, if the printer name is scxxxx, enter `lpr -Pscxxxx`.



4. Click the SCAN button. The scanned image is sent to the printer.

Chapter 3

Configuring SANE Network

Image Scan! for Linux uses the SANE library to access your scanner(s). This library contains a network module*¹ that, with a little configuration, makes accessing scanners over the network a breeze. This section explains how to get a network setup to work. Here, a computer running Image Scan! for Linux is called “the client”, and the computer that is connected to the scanner is called “the server”*².

For information on how to connect from Image Scan! for Linux to a scanner that is directly attached to the network, see Chapter 4, “Setting Network Plug-in.”

Note

- *¹ *The SANE developers call this a backend, but other people may be more familiar with the term “driver”.*
 - *² *It is very well possible that the client and the server refer to the one and the same computer.*
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Setting Up the Client

On the client side, you need to check that the net module is enabled in `/etc/sane.d/dll.conf` and that the server(s) you want to use are listed in `/etc/sane.d/net.conf`. Sample versions of the files may look like:

```
net
epkowa # needed by iscan
```

for a minimalistic network enabled `dll.conf` usable with `iscan`, and


```
scan-server
192.168.0.1
```

for a simple two server `net.conf`. Hosts can be specified by name or by IP address. Both files are plain text files and can be edited with your favorite text editor. You do need root permissions to do this, though. For more detailed information about these files (and more), refer to the `sane-dll(5)` and `sane-net(5)` manual pages.

You also need a `sane` entry in `/etc/services`, but installing Image Scan! for Linux should have taken care of that. The required entry looks like:

```
sane 6566/tcp # SANE network scanner daemon
```

You can easily find it with the following command:

```
$ grep 6566/tcp /etc/services
```

Setting Up the Server

On the server side, you need to add the clients that are allowed to use the scanner(s) to the `/etc/sane.d/saned.conf` file. A sample setup may look like:

```
scan-client
192.168.0.2
```

For detailed information about the `saned.conf` file (and more), refer to the `saned(1)` manual page.

The server's `/etc/sane.d/dll.conf` should have the `epkowa` module enabled. Installation of Image Scan! for Linux adds this module and enables it by default.

Just as on the client, the server's `/etc/services` needs a sane entry. Again, the installation of Image Scan! for Linux should have taken care of that.

The `saned` daemon (the program that handles all SANE network scan requests) is typically started and stopped via the internet super-server: `inetd` or `xinetd`. If your system uses `inetd`, you need to add a line like

```
sane stream tcp nowait root.root /usr/sbin/saned saned
```

to your `/etc/inetd.conf` file and restart the daemon. This requires root privileges. Restarting is typically achieved via

```
# /etc/init.d/inetd restart
```

On `xinetd` based systems, you need to add a sane file in the `/etc/xinetd.d/` directory and possibly tweak `/etc/xinetd.conf`. A sample sane file is provided with Image Scan! for Linux in the documentation directory and looks like

```
# default: off
# description: SANE network scanner daemon
service sane
{
    disabled      = no
    port          = 6566
    socket_type   = stream
    wait         = no
    user         = root
    server       = /usr/sbin/saned
}
```

Restart `xinetd` after adding the file.

Troubleshooting

Many factors play a role in networking and some of these may prevent your configuration from working. Some of the more common, network related culprits are:

The sane service

Although the SANE documentation refers to it as the *sane* service, the IANA has registered it as the *sane-port* service. This means that your systems may only have a *sane-port* service in its `/etc/services` file. This can wreck havoc on your network scanner setup.

To fix this, you can:

- 1) add an alias to your `/etc/services` so the entry looks like

```
sane-port 6566/tcp sane # SANE network scanner daemon
```

and/or

- 2) modify your `/etc/inetd.conf` or `/etc/xinetd.d/sane` file to use the *sane-port* service instead of the *sane* service. You may also have to adjust the `/etc/hosts.allow` and/or `/etc/hosts.deny` files (see below).

firewall

Many distributions allow you to set up a packet filtering firewall during installation. If this firewall rejects or drops network packets directed at port 6566, the port used by *saned*, you will not be able to contact the scan server. Note that both the server and client need to accept packets on the input and output chains.

TCP wrappers

Another access control mechanism that may prevent you from accessing *saned* on the server is *tcpd*. This wrapper utility decides access based on information in the `/etc/hosts.allow` and `/etc/hosts.deny` files. Naturally, the server needs to allow the client and *vice versa*. Refer to the `hosts_access(5)` manual page for details.

host name resolution

The *saned* daemon does reverse name lookups before it responds to scan requests. This means that it checks whether host name and IP address match. If your domain name service (DNS) server is slow to respond, misconfigured or temporarily unavailable, reverse name lookups will fail and clients will not be allowed to connect.

Chapter 4

Setting Network Plug-in

This chapter explains how to set the connection from Image Scan! for Linux to a scanner that is directly attached to the network.

By using the network plug-in, you can connect to a scanner that is directly attached to the network.

Please note that scanning over the network is only supported in a client/server setup. Scanners directly attached to the network are not supported.

Installing Network Plug-in

When installing the network plug-in, Image Scan! for Linux must be already installed.

In most graphical environments, just double-click the Image Scan! forLinux binary package icon to install it.

If this does not work for you, install it from the command line with the least common denominator tools using the following steps:

1. Log in as a user with root privileges.
2. Execute the following command to install the network plug-in.
3. If you are not using the default printer, click the Configuration button and then enter the print command. Click OK.

For Debian packages:

```
# dpkg --install iscan-network-nt-$version-$release.deb
```

For RPM packages:

```
# rpm --upgrade iscan-network-nt-$version-$release.rpm
```

Uninstalling Network Plug-in

1. Log in as a user with root privileges.
2. Execute the following command to uninstall the network plug-in.
3. If you are not using the default printer, click the Configuration button and then enter the print command. Click OK.

For Debian packages:

```
# dpkg --remove iscan-network-nt
```

For RPM packages:

```
# rpm -e iscan-network-nt
```

Setting Network Plug-in

1. Connect the scanner to the network and set the IP address.
For information on how to set the IP address, refer to the user manual shipped with your scanner.
2. Please enter the information on your scanner in `/etc/sane.d/epkowa.conf` by using root privileges.

How to enter the information:

```
net [IP address] [port number]
```

or

```
net [ host name] [port number]
```

Note: Please set [port number] to 1865.

Entering a port number is optional, so you can omit it. However, you must enter an IP address port number.

Example:

If the IP address host name is set to 192.16.136.2 on your scanner, please add the following line in the file.

```
net 192.16.136.2 1865
```

3. Start iscan. When starting, if it identifies the scanner on the network properly, it will work without any problems.
At this time, if multiple scanners are connected, the Scan Selector dialog box is displayed just like when connected locally. See “Scan Selector dialog box” on page 14.

Note

If the message Could not send command to scanner. Check the scanner's status. is displayed and you cannot start Image Scan for Linux!, the network plug-in might not be compatible with your model.

Please check the following to see the list of compatible models.

```
/usr/share/doc/iscan-network-nt/NEWS
```

or

```
/usr/share/doc/iscan-network-nt-x.x.x/NEWS
```

If your model is not in the list, please check whether your settings are correct.

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