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TurboPrint 2

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1. License terms

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If you are using TurboPrint trial version, you may use it for test purposes up to 30 days. Please note that the trial version also contains the additional functions of TurboPrint "Pro" and "Studio" versions.

With a personal license key you have the non-exclusive right to use TurboPrint only on a single computer (multi user license: on the number of licensed computers). A license is required for every computer where TurboPrint is installed.

TurboPrint "Family License" is valid for installation on up to three computers within the same household. The "Family License" is only for private use, not for commercial or educational use.

The TurboPrint package contains the optional components "BJNP backend for Canon network printers", "GIMP print plugin" and "GPL Ghostscript" that can be optionally installed. These components are modified versions of open-source software that has been published under GNU General Public License Version 2. The versions for TurboPrint have also been published under GNU GPL V2, the sourcecode is available on our FTP server <ftp.zedonet.com> in the directories "bjnp", "gpturboprint" and "gszedo".

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We would be happy if you like TurboPrint and want to continue using it after the test period. For this purpose please buy a personal license key file in our online shop on <http://www.turboprint.info>. With this key file you can convert TurboPrint into the full version.

Have fun with TurboPrint and the best printing results ever!

2. Welcome to TurboPrint 2!

We are happy to welcome you as a user of our TurboPrint printing system!

TurboPrint 2 makes printing on the Linux OS much more comfortable. It offers many possibilities to adjust printouts to your needs and to get the best possible print quality!

Printing with Linux could be rather frustrating: no driver might be available for your printer, print quality is low, colors are not correct – or the printer does not react at all and you don't even get an error message!

Much better with TurboPrint: Its printer status monitor informs on printer activity – including detailed error messages, if necessary – and also displays ink usage and remaining ink capacity.

Key features of TurboPrint 2:

Intelligent printer drivers

No need to adjust settings like gamma, color saturation, color balance etc. Simply choose your printer, paper type and print quality – the rest is done by TurboPrint's intelligent printer drivers (of course expert users can control all settings manually).

Our drivers support nearly all features of your printer like special print media, CD/DVD printing on certain printers, photo inks and highest print resolution.

Color management

A highlight of TurboPrint 2 is the new integrated color management – it is easy to use and ensures perfect colors. You can choose the document color space, adjust the light source and correct color & grey balance. The "Studio" version of TurboPrint also supports CMYK proof prints with exact colors.

Using the color profiles that are included with TurboPrint (and additional color profiles either from ZEDOnet's profiling service or your own ICC profiles) each shade of color is perfectly matched in the printout.

It is also possible to add ICC profiles for your scanner or digital camera for perfect color matching from your input device to printer output!

Printer status monitor

Be always informed on what your printer is doing. TurboPrint 2 comes with a new printer status monitor that continually shows printer status, remaining ink and print jobs – even over a network connection, if the printer is attached to a Linux printer server where TurboPrint is installed.

Panel applet

An optional panel applet informs on printer warnings & errors and offers quick access to TurboPrint's status monitor and control center.

Print preview

When printing documents (e.g. from a web browser) the printout is often quite different from what you see on the screen. Use TurboPrint's preview feature to see what the prints will look like, thus minimizing waste of ink and paper.

Manual duplex printing

Only few printers feature an automatic duplex unit to print on both sides of the paper. With TurboPrint every printer can print duplex! If the "manual duplex" feature is activated, TurboPrint will first print all odd pages of a document. Then the user is informed to reverse the paper stack and TurboPrint will print all even pages.

Color profiling service

Using our profiling service you can further improve print quality – especially if you are using compatible ink cartridges or print media that are not directly supported by our drivers. We create individual color profiles at a very affordable price – no expensive hard- & software is required!

TurboPrint can print a color chart page with approx. 700 color patches. The ZEDOnet profiling service will measure the color chart with a spectrophotometer and send you an individual color profile by e-mail.

With an individual color profile, color reproduction becomes more accurate. It also ensures the best print quality on third party paper and ink.

Ink management

TurboPrint not only matches document colors to printed colors, it also allows you to control the mix of inks applied to the paper. TurboPrint's intelligent ink saving mode can reduce ink consumption by 25-50% without producing pale looking pictures. This is done by limiting the maximum amount of ink used in saturated colors and by using more black ink in dark areas instead of mixing dark shades with color inks. With photo printers, TurboPrint can also reduce photo ink consumption and use the darker (and more economic) regular inks instead.

On the first glance you won't even notice the difference!

3. New features of TurboPrint 2

For users of the previous version TurboPrint 1.x we have put together the most important new features in this section.

Only one central configuration program – no root login required

Previously there were two TurboPrint configuration tools – TurboPrint Setup for printer setup and TurboPrint Config for printer configuration. TurboPrint 2 combines these two programs in one control center. A "root login" is no longer required – the new "TurboPrint Control Center" requests the administrator password only when it becomes necessary.

TurboPrint Printer Monitor

Linux has a sophisticated system of access rights – a regular user has only limited access to the computer system. In TurboPrint 1.x it was necessary to log in as "root" user to get the printer's ink status.

With TurboPrint 2 comes a new software component, the *TurboPrint Printer Monitor*. It continually monitors the printer in the background, informs the user on ink status and also reports printer warnings and errors – this information can even be forwarded to other computers in a network.

Other new features – see description in the previous chapter:

- color management
- status monitor with panel applet
- duplex printing
- print preview
- ink management & ink saving mode
- color profiling service
- new print plug-in for "GIMP" graphics program makes printing via TurboPrint very easy and comfortable

4. Installation and printer setup

4.1 Installation

Three different installation packages are available for TurboPrint 2 – choose the one that is best suitable for your Linux system.

Different Linux distributions have different types of installation packages. E.g. SuSE-Linux, Mandriva and Fedora / RedHat Linux use the **RPM package format**, Ubuntu and Debian Linux use the **DEB package format**. If your Linux uses one of these package formats, download and install the appropriate TurboPrint package.

As an alternative there is the **TGZ archive** that can be installed on all current Linux systems.

With the DEB and RPM packages a standard installation is performed. When you start TurboPrint for the first time you can adjust the installation according to your requirements. An advantage of these installation packages is that the Linux package management system can automatically add further system components that might be required.

The TGZ archive can be installed on all Linux systems. The included setup program has a graphical user interface, offers additional installation options and displays a detailed installation protocol.

In the following sections the installation procedure for the three different package types is described – follow the instructions for your package format.

If you want to update an existing TurboPrint installation also proceed as described in this chapter - your printer settings will be retained.

4.1.1 Installation of RPM package or DEB package

In most Linux distributions an RPM or DEB package can be installed by a simple mouse click on the package file. The package manager should come up and lead through package installation. If this doesn't work, you can also start the package manager of your Linux system and choose the TurboPrint RPM or DEB package from there.

After successful installation a printer driver should be set up in TurboPrint and optionally also a license keyfile can be installed. For these tasks please open the TurboPrint control center by clicking on the "TurboPrint Control" icon or by entering "turboprint" in a terminal window.

Continue reading with the section after next for a detailed description.

4.1.2 Installation of TGZ archive

First the TurboPrint archive must be extracted - on most Linux distributions this can be done by clicking on the archive with the right mouse button and choosing "extract here". As an alternative, click on the archive with the left mouse button to start the archive manager. From there extract the archive.

By extracting the archive a directory named "turboprint-2..." will be created which contains all TurboPrint installation files.

Open this directory and double click on the file named "setup" (if a dialog comes up that contains the option "execute", choose this option).

Note: If your Linux system doesn't have a graphical user interface, you can install TurboPrint from command line. The following command extracts the TurboPrint archive:

```
tar -xzf turboprint-2.xx.tgz
```

("xx" must be replaced by the actual version number).

Then enter the command

```
cd turboprint-2.xx
```

to change into the installation directory and enter

```
./setup
```

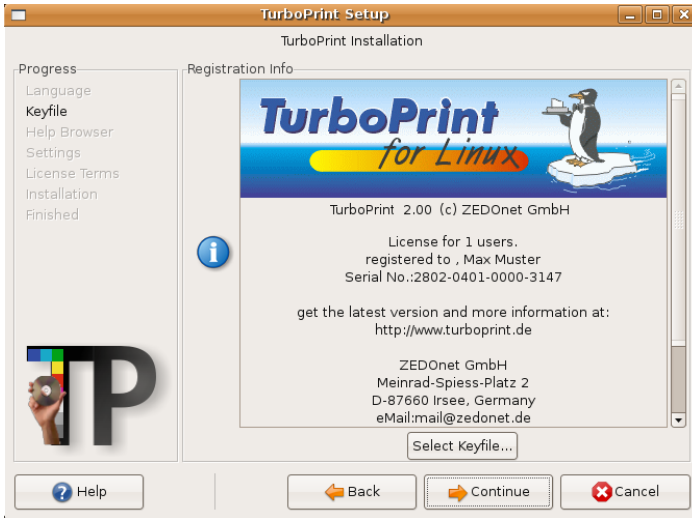
to start installation. Some of the installation options that are described in the following paragraphs are also offered during command line installation.

Now the TurboPrint installation dialog window should appear.

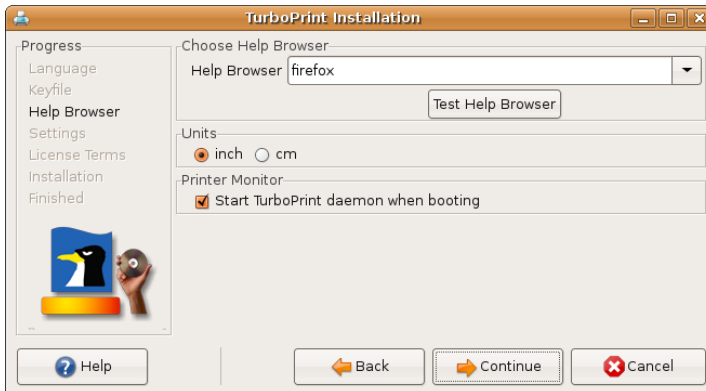
All further installation is performed in this dialog. The "Setup mode" should be set to "Install" - the option "Uninstall" can be used to remove TurboPrint from your system.

Click on "Continue" to continue with the next installation step.

If you already have a license keyfile, you can choose it here, in order to install TurboPrint as full version. Press "Select Keyfile..." - a file selection dialog will open where you can select your license key file.



In the next installation step some basic settings can be adjusted:



Units

Choose either „inch“ for imperial units or „cm“ for metric units.

Start TurboPrint daemon when booting

This option should be selected in order that TurboPrint status monitor can display the printer's status and ink levels (TurboPrint daemon is a background process which enables the status monitor to access the printer ports).

WEB Browser for online help system

If the default **web browser** "Firefox" is not available on your Linux system, you can also choose a different browser. Either select a name from the drop down list or enter the command line name of the browser of your choice.

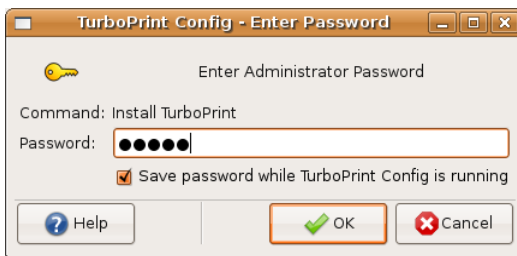
Note: To test if the name is correct, you can also enter it in a terminal window. If the web browser window does not open, the name is incorrect and TurboPrint's online help system will not function.

Click "**Continue**".

The following installation step offers "**Advanced settings**". These are for expert users and should not have to be changed.

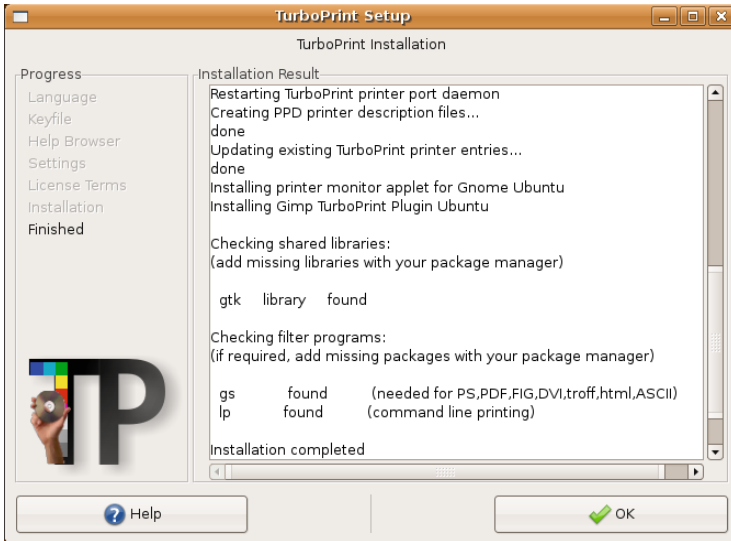
After that the license terms will be displayed – read them thoroughly, confirm by checking "Accept license terms" and press "OK" to start installation.

Setting up the printer in Linux requires administration privileges, so you will be asked for your administrator password.



Authorization

Depending on the Linux distribution this is either your user password (you must be a user with administrative rights) or the "root" password. Now the actual installation is performed and an installation protocol is shown.



Setup - window "installation protocol"

In the protocol please read the sections "checking shared libraries" and "checking filter programs for file conversion". In these sections it is listed which program packages were found on your computer. If some packages are marked with "not found (required)", you must add them with the package manager of your Linux distribution to get TurboPrint function properly. Packages marked with "not found (option)" are only necessary if you actually want to print files of this type.

Finally finish the installation with "OK".

4.2 Registering TurboPrint

After the 30 day trial period TurboPrint must be activated with a license key file – otherwise a "TurboPrint" logo will be added on every printed page.

A license key can be purchased on our web site www.turboprint.info.

The license key can be chosen during installation (TGZ archive only – see previous chapter "4.1.2 Installation of TurboPrint TGZ archive") or later at any time from the TurboPrint control center.

To activate TurboPrint with a license key file, start the TurboPrint control center program (click on the icon "TurboPrint" or enter "turboprint" in a terminal window) and choose the option **"About / license"**. In the following window choose **"Select Keyfile"**. A file selection dialog will open where you can select the key file. After selecting the file click on "Open".

If the key file was accepted, your name and license type will be displayed in the window in the frame **"Registration Info"**.



If your Linux system does not have a graphical user interface:

You can also register TurboPrint from command line using

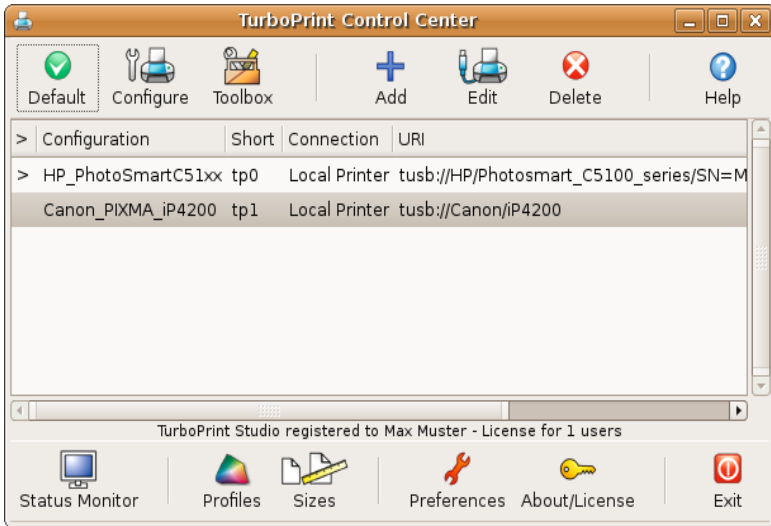
```
tpsetup --install keyfile-pfad/keyfile-name
```

4.3 Setting up a printer

Before your printer can be used with TurboPrint, it must be set up in the TurboPrint control center.

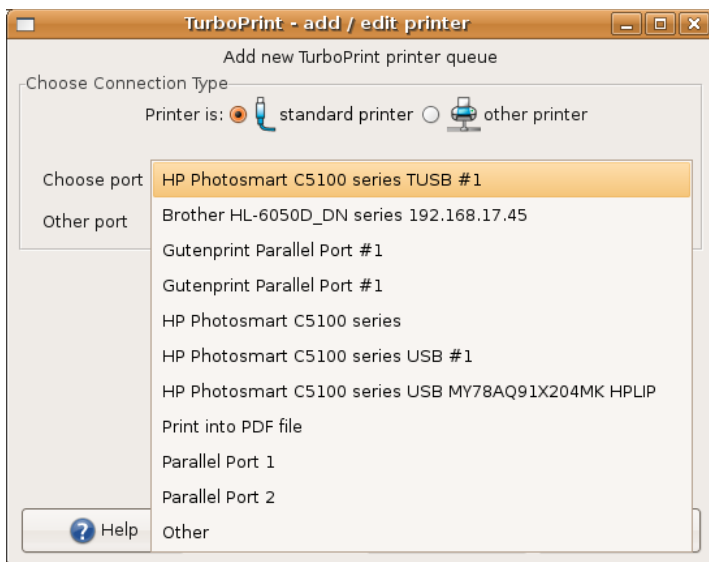
Note: A detailed description of all printer setup options can be found in the chapter "6. Add / edit printer".

Start the control center "TurboPrint Control". The main window looks as follows, however the list of printers will be empty first:



TurboPrint control center – main window

Press the button "Add" to add a new printer. The dialog "Add / edit printer" will open:



Dialog "Add printer"

There are two types of printer connections in the printer setup dialog: "**standard printer**" (printers that have been recognized automatically and other locally connected printers) and "**other printer**" (printers that are not automatically recognized, e.g. most network printers).

Standard printer

With the setting "standard printer" all printers that have been recognized automatically are listed. Choose the entry for your printer from the list.

There may be several entries for your printer if there are several port drivers for this printer port. E.g. a USB printers is listed once with TurboPrint's "TP-USB" port driver (URI = "tpu") and once with the standard "USB" driver of the CUPS printing system.

Choose the entry that contains "**TP-USB**" so that the printer status can be displayed in the TurboPrint status monitor even while printing.

Note: the printer must be connected and switched on before the TurboPrint control center is started. If the printer is not recognized, plug in and switch on the printer, then quit TurboPrint control center and start it again.

A printer that is connected to a different local port – e.g. to the parallel port – may not be automatically recognized. If the printer port is in the list, simply select it. If you know the Linux device name for the port, enter it in the field

"Other port" – e.g. `"/dev/lp0"` is the **parallel printer port**.

Other printer

For network printers and other printers that are not recognized automatically choose "other printer" and specify manually how the printer can be reached. Information on all options can be found in chapter "[6. Add / edit printer](#)".

Selecting the printer driver

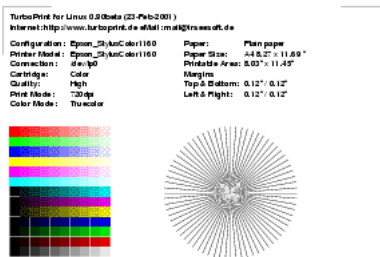
Click on "Continue". In the window "**Choose driver**" you should first select the manufacturer of your printer, then select the model name of your printer in the list below.

The next step is to enter a "**configuration name**" and a "**short name**" for the printer queue. In most application programs you can choose your printer using the short name.

Finally click "OK".

Setting up the printer in Linux requires administration privileges, so you will be asked for your administrator password. After entering the password a dialog will offer to print a test page – thus you can test if all settings are correct. You can also print the test page later from the TurboPrint printer "Toolbox".

If you have chosen to print a test page the printer should start printing a page that looks like this:



If the printer doesn't print (or doesn't print correctly) read chapter "[14. Problems and solutions](#)".

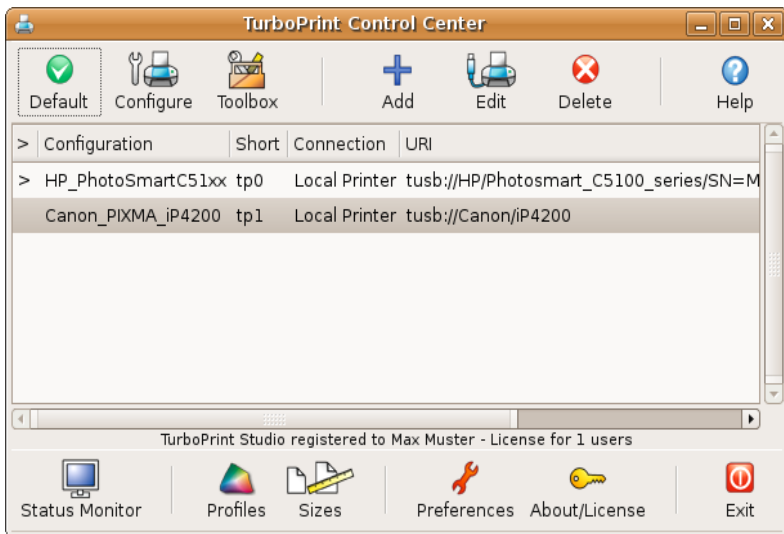
5. TurboPrint Control Center

The TurboPrint Control Center is TurboPrint's central configuration program where you can add or delete printers, configure printer settings and adjust other general settings.

You can also change the default print settings, add color profiles, define new page formats or open the printer toolbox for maintenance tasks.

To start the control center, click on the icon **"TurboPrint Control"** or enter "turboprint" in a terminal window.

The main window of the control center contains a list of all TurboPrint printers and two panels with buttons to access all configuration options:



TurboPrint control center

The following buttons are available:

a) Printer specific functions:

- **Default** - make the currently selected printer the default printer
- **Configure** - change print settings like media type, print quality etc. (chapter "8. TurboPrint print settings")
- **Toolbox** - open printer toolbox for maintenance functions e.g. test page, nozzle check, cleaning, head alignment (chapter "7. Printer Toolbox")

- **Status Monitor** - open the printer monitor to see printer status, current print jobs etc. (chapter "[11. TurboPrint Printer Monitor](#)")
- **Profiles** - opens the color profile administration (chapter "[10. „Profiles” - color profile administration](#)")
- **Sizes** - define custom page sizes and adjust CD print settings (chapter "[9. Custom page size editor](#)")

b) Administration of print queues:

A detailed description of these functions can be found in chapter "[6. Add / edit printer](#)".

- **Add** - add a new print queue with a TurboPrint driver
- **Edit** - change driver settings and port or network settings
- **Delete** - delete a print queue

c) General functions:

- **Preferences** - configure TurboPrint user interface settings like language and measurement units
- **About / License** - display license information / activate TurboPrint with a personal license key file
- **Help** - open the TurboPrint manual

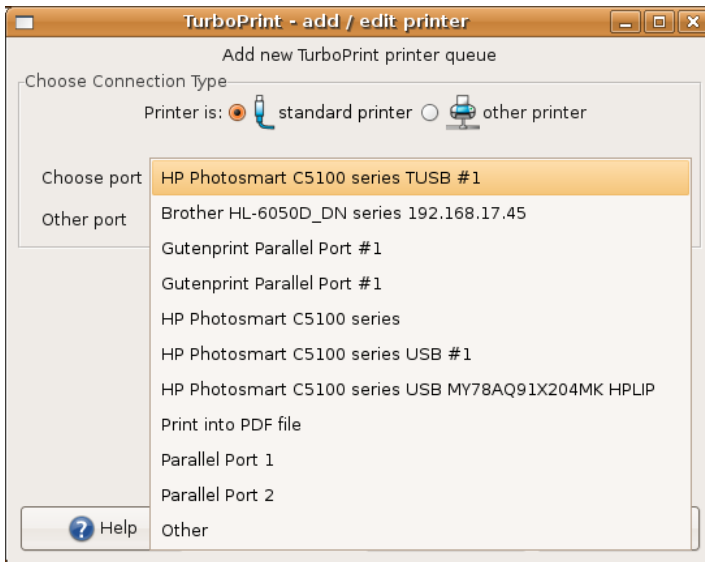
Use "**Exit**" to quit the TurboPrint control center program.

6. Add / edit printer

This chapter describes printer setup with TurboPrint. Open the TurboPrint control center with the "TurboPrint Control" desktop icon (or start it from the TurboPrint applet or from command line by entering "turboprint").

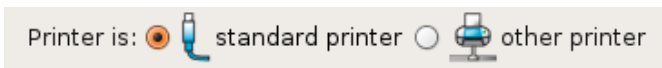
To add a new printer configuration, press the button "Add", to edit an existing printer configuration press "Edit".

Adding a printer



Dialog "Add printer"

There are two types of printer connections in the printer setup dialog: "**standard printer**".and "**other printer**".



If "**standard printer**" is selected, a list of all printers and printer ports that have been automatically detected is shown. Even some certain network printers are found automatically and can be selected in the list.

Printers that are attached via network connection, e.g. printers that are connected to a printer server or to another computer in the local network are

generally not detected automatically. Use the setting "**other printer**" to specify network settings manually.

6.1 Selecting the printer connection

Standard printer

If the printer is connected directly to the computer's USB port, it should be visible in the list next to "Choose port".

Note: the printer must be connected and switched on before the TurboPrint control center started.

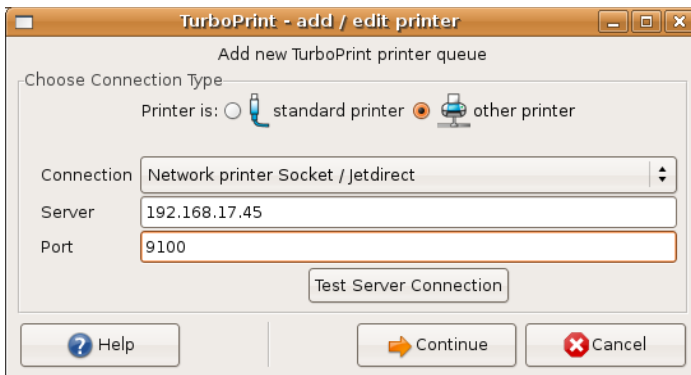
There may be several entries for your printer if there are several port drivers for this printer port – e.g. a USB printers is listed once with TurboPrint's "TP-USB" port driver and once with the standard "USB" driver of the CUPS printing system.

Choose the entry that contains "**TP-USB**" (URI = "tpu") so that the printer status can be displayed in the TurboPrint status monitor even while printing.

For printers connected to the computer's parallel port, choose the entry "Parallel Port 1".

If your printer and printer port is not visible in the list, try to set up your printer using the choice "other printer".

Other printer



The following "**Connection**" types can be chosen:

- Network printer - LPD

- Windows network printer - SMB
- Network printer – Socket / Jetdirect
- Linux network printer - IPP
- File
- other (CUPS URI)

First you have to determine which connection type is suitable.

6.2 Network printer – which connection type is correct?

a) Network printer / printer server box

For most printers that have a built-in network interface or that are to the network using a printer server box the "LPD" or "Socket / Jetdirect" network protocol can be chosen. Most network printers and printer servers support several protocols, often also the IPP protocol is supported. If you don't have information on the network protocols supported by your printer or server, you can try all three protocols.

b) Printer attached to other computer in network

If the printer is connected to another computer in the network, choose either "Windows network printer" or "Linux network printer" depending on the computer. Current Apple computers also support the IPP protocol.

Of course the printer must be "shared" so that it accepts print jobs from other users in the network.

Note: Printers that have been shared for network use from Linux and Apple servers are automatically visible on other Linux clients, provided that "printer browsing" is enabled on the server & client. If you print to such a shared network printer the print job is processed on the server – this means that TurboPrint's printer status monitor cannot show a print preview or control print jobs on the server.

It often makes sense to set up a print queue also on the client computer - print jobs are processed locally and print preview is possible. In this case the server will pass through all print data directly to the printer port.

c) other printer port on local computer

If your printer is not connected via network but to a local port that is not listed under "Standard printer", choose "Other (CUPS URI)".

6.3 Settings for Network Printers

a) Network printer (LPD / Socket / IPP / Windows)

Most network printers accept the "Socket" protocol, so in most cases you can choose this setting. If the printer doesn't respond, you can also try the "LPD" protocol.

To reach a network printer you need its IP address and the name of the print queue or printer port.

Server Address

In the field „**Server**“ enter the IP address (e.g. "192.168.17.23") or symbolic name of the server the printer is connected to.

If you don't know the IP address, please read the manual of the printer or printer server. In most cases the IP address can be changed in the printer's or server's configuration menu.

Printer / Port

In the field "**Printer**" the name of a print queue on the server has to be specified. Depending on the protocol different names are used:

- With the **LPD** protocol you can enter "lp0" or "lp" for the first printer, "lp1" for the second printer etc.
- For **IPP** printers enter the name of the print queue on the server – often the prefix „printers/“ has to be added before the name, e.g. „printers/myprinter“.
- For **Windows printers** the "share name" must be entered (the share name is specified under Windows when a printer is shared for network access).

The entry "**Port**" is used for the **Socket / Jetdirect** protocol. In most cases the value "9100" is used for the first printer attached to the server, "9101" for the second printer etc. If you don't specify a "Port" number, the default value "9100" will be used.

Workgroup and User / Password

(only for **Windows** printers)

It is only necessary to enter the "**Workgroup**" name if your computer belongs to a different workgroup than the printer server.

Depending on how the printer is shared on the Windows computer you

may have to specify a user name and password.

Important: The password is stored **without encryption** so for security reasons it should be different from any login passwords!

b) File (only for expert users)

With this connection type print data are written into a file instead of being sent to a printer. This can be used for test purposes or to send printer data directly to the printer later.

In the field "Filename" you have to enter the complete path including the file name, e.g. "/tmp/printdata". Make sure that the print system (lp daemon) has access to the specified directory.

Note: Printing to files may have to be enabled in the configuration file of the CUPS printing system. Edit the file "/etc/cups/cupsd.conf" and add the line "FileDevice Yes" (or remove the comment "#" in front of this line if it is already present).

c) other (CUPS URI)

With this connection type the CUPS device address ("URI" - Universal Resource Identifier) can be specified directly. This can be used to choose a printer connection that is not offered in TurboPrint's printer setup dialog.

An example for a CUPS URI is:

```
ipp://servername/printers/printername
```

This would connect to a printer named "printername" on a server named "servername" using the "IPP" protocol.

For details see the documentation of the CUPS printing system

<http://localhost:631/>

After choosing the connection type and specifying the network parameters click on "Continue".

6.4 Selecting the printer driver

In the window "**Choose driver**" you should first select the manufacturer of your printer, then select the model name of your printer in the list below.

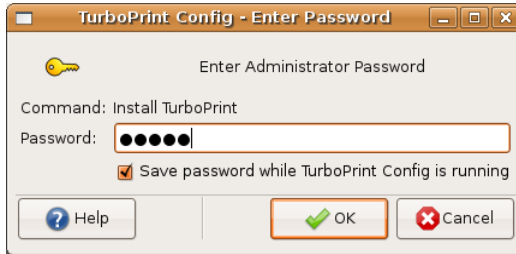
The next step is to enter a "**configuration name**" and a "**short name**" for the printer queue. In most application programs you can choose your printer using

the short name.

Finally click on "OK".

Completing printer setup - Authorization

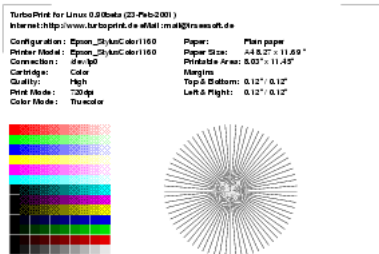
Setting up the printer in Linux requires administration privileges, so you will be asked for your administrator password.



Depending on the Linux distribution this is either your user password (you must be a user with administrative rights) or the "root" password.

After entering the password a dialog will offer to print a test page – thus you can test if all settings are correct. You can also print the test page later from the TurboPrint printer "Toolbox".

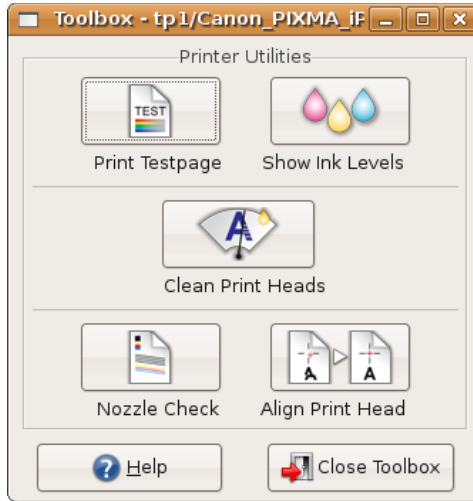
If you have chosen to print a test page the printer should start printing a page that looks like this:



If the printer doesn't print (or doesn't print correctly) read the chapter "[14. Problems and solutions](#)".

7. Printer Toolbox

The printer toolbox offers printer maintenance functions. It can be opened from the TurboPrint control center or from the Print Monitor.



TurboPrint Printer Toolbox

Depending on the printer the following functions are available:

- **Print Testpage**
- **Show Ink Levels**
- **Nozzle Check**
- **Clean Print Heads**
- **Align Print Head**

After selecting one of these buttons the selected maintenance job is performed or an additional menu with some further choices will be displayed (e.g. clean black or color print head)..

7.1 Print Testpage

It is recommended to print a test page after adding a printer - or if printing from applications does not work properly. The “test and status page” also contains important information on printer setup.

7.2 Show Ink Levels

Available for most inkjet printers - displays the current ink levels. The printer must be switched on. Also the TurboPrint Daemon must be enabled.

7.3 Nozzle Check

Use this function to check if the print head is working properly. A sheet of A4 or Letter sized paper is required. For each ink color a test pattern is printed. If one or several lines are missing or "smeared", the toolbox function "Clean Print Heads" should be executed.

7.4 Clean Print Heads

Starts automatic head cleaning. It is normal that ink nozzles get clogged from time to time, so print quality is reduced (e.g. "banding"). In this case print a "Nozzle Check" page and start print head cleaning if necessary.

Attention: Cleaning consumes some ink, so this function should only be executed if necessary.

7.5 Align Print Head

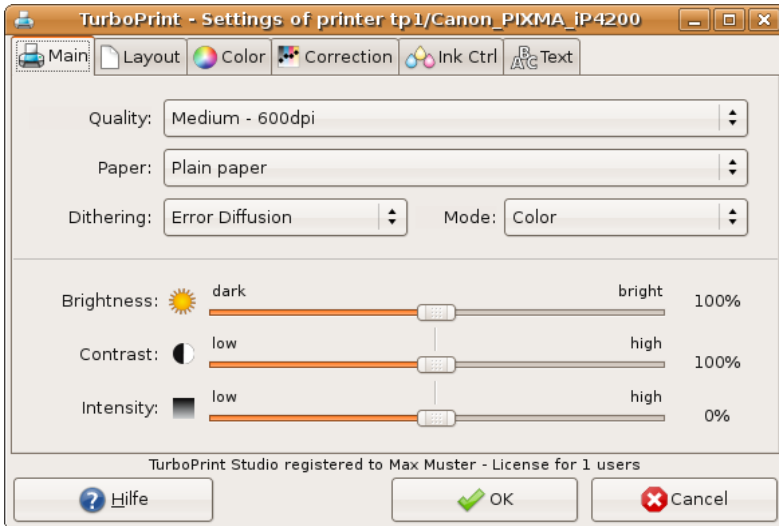
Align the black & color print heads and / or align bidirectional printing. The alignment procedure depends on the printer model. Usually a page with several lines of test patterns is printed. For each line, the number of the best aligned pattern must be entered (e.g. choose the field where two lines align best or where the least "banding" is visible).

8. TurboPrint print settings

The TurboPrint menu with printing settings can be accessed via the TurboPrint control center program or with the „configure“ button in the printer monitor. The settings are split into sub-menus that are organized like index cards:

8.1 Index card „Main“

The most frequently used settings can be found on this index card.



Quality

Almost every printer offers several print modes. Generally, the higher the print quality the longer the printout will take. So you will probably choose a lower print quality for draft and test printouts and one of the highest qualities for the final printout.

Paper

Specify the medium you want to print on (i.e. the type of paper or a different media type like transparency, printable CD, etc.). Internally, TurboPrint chooses the appropriate color profile for this medium and adapts other printing parameters like printing speed, amount of ink, interleaving, etc.

To achieve a good color quality it is very important that you set the correct media type. As an alternative you can select a similar medium, e.g. "Inkjet Paper" for any matte coated inkjet paper or "Glossy" for any glossy or semi-glossy coated photo paper. But keep in mind that you can only obtain exact colors if the paper is supported directly.

Adding new papers

(only TurboPrint Pro / TurboPrint Studio):

You can further improve the color quality – especially if your preferred paper is not supported directly – with an individual TurboPrint color profile for your printer and your preferred paper by the ZEDOnet profile measuring service. Read more about individual color profiles in the description of the TurboPrint printer profiles section "[10. Profiles - color profile administration](#)".

Dithering

Pictures and photos can contain millions of different colors, but printers normally can only print with black and three (or up to eight) different ink colors. It is therefore necessary to create intermediate colors or shades of gray either by mixing the ink colors and/or by applying certain dithering patterns to produce the illusion of more colors than the printer actually provides. To accurately represent all colors, TurboPrint supports three different dithering patterns:

Error Diffusion (recommended setting for inkjet printers)

This diffuse pattern tries to eliminate any visibly noticeable geometrical pattern. Even fine details are reproduced. As the distribution of the dots requires a lot of processing power, the printout time is higher than with the *Ordered* patterns.

Ordered fine

The dot pattern is similar to those used for newspapers printing. In this mode printouts are not as smooth as with the *Error diffusion* pattern but significantly faster.

Ordered coarse (best pattern for laser printers)

This pattern is not as fine as the other "Ordered" pattern and is therefore better suited for laser printers as these printers have difficulties in producing a homogeneous printout with fine patterns.

Cartridge

This setting is only available for certain printers to control printer specific options, e.g.

- black or color print head inserted in the printer

- 4-color printhead or 6-color photo printhead used
- matte black or photo black ink cartridge used
- gloss optimizer on or off
- normal or economy print mode

Brightness

Use this slider to render the printout lighter or darker. The higher the value the brighter your printouts will get and vice versa.

Note: Only intermediate colors will be changed, black and white will remain unchanged - i.e. pure black will be printed as pure black, white as pure white. If you also want to brighten the black parts of a printout you can reduce the contrast with the control described next.

Contrast

Use this slider to increase or decrease the contrast of your printout. With a decreased contrast white will stay unchanged, i.e. only dark colors will become brighter. With an increased contrast bright colors will become brighter and dark colors will become darker.

Intensity

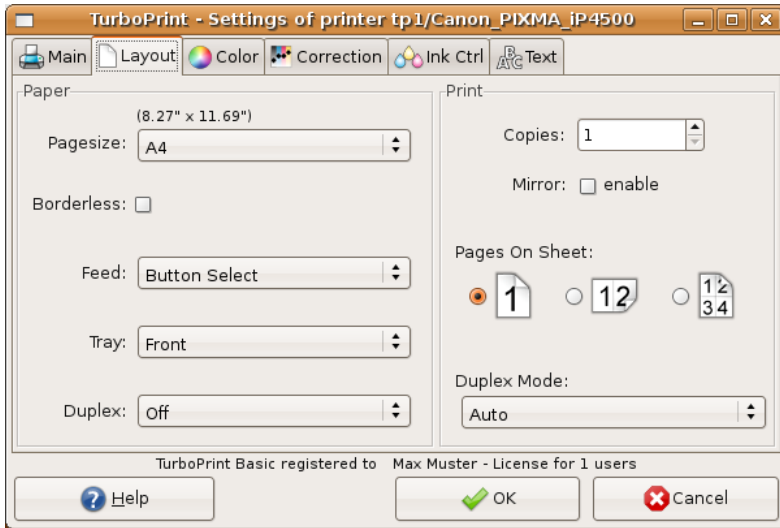
Increases / decreases the amount of applied ink. Hence the complete printout will become paler (move slider to „low“) or more intense.

A lower saturation is good print test prints and in cases where too much ink is applied. You can easily save ink with this slider, however this will result in visibly paler printouts – to save ink without that impact, preferably use the „ink control“ sliders.

A higher saturation can be used to get intenser colors on certain media that need a higher ink usage (e.g. some transparencies or printable CDs).

Attention: Inks might flow on the paper if too high saturation levels are used.

8.2 Index card „Layout“



Pagesize

The paper size, e.g. Letter, A4, etc.

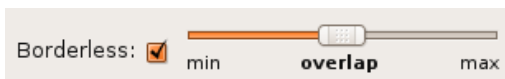
- Page sizes of photo papers are sometimes identified by their measurement in inches (e.g. 4x6" = 10x15 cm) – the actual size is shown above the selection.
- Additional paper sizes can be added with the „Custom Page Size Editor“ (see chapter "9. Custom page size editor").

borderless

This option is only available if borderless printing is possible with the selected page size.

Note: Borderless printing is not supported by all printers

overlap



When printing borderless the document is slightly enlarged in order to let it

overlap the page borders a little bit. This ensures that even with minor mechanical deviations of the printer no white margins will be visible at any border.

The level of enlargement can be selected by the „overlap“ slider. Position „min“ means no enlargement at all.

Hint: If even in the „max“ position there is still a white margin visible at one border, you can define a new borderless page size in the „Custom Page Size Editor“ where you can edit printing position and enlargement individually.

Feed

The input feed (e.g. manual or automatic).

Tray

The output tray (only for printers that support different output trays).

Duplex

Activate "Duplex" mode if you want the printer to use both paper sides. You can choose between „portrait“ and „landscape“ format – depending on which side the pages should be turned over later.

For printers that do not support automatic duplexing a manual duplex mode is offered by TurboPrint. See „Duplex Mode“ setting.

Copies

If you need several copies, enter the desired number of printouts ("1" means no copies).

Mirror

The printout will be mirrored (left and right swapped). This setting is activated automatically for "backprint" and "t-shirt transfer" media.

Pages On Sheet

With this function you can print several scaled down pages on one sheet of paper.

- 1 - one page per sheet (default)
- 2 - print two pages on one sheet; the printout is rotated by 90 degrees
- 4 - print four pages on one sheet

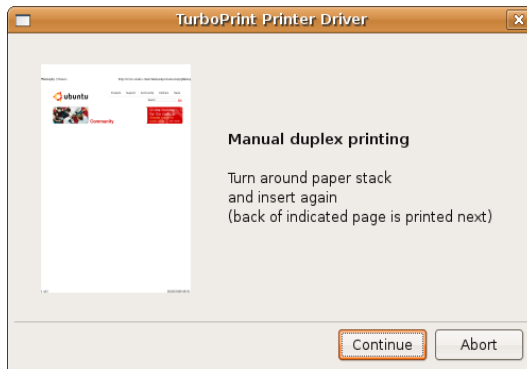
Note: The „Pages On Sheet“ function is an option of the CUPS printing system which is not compatible to all application programs. With incompatible applications you might get a normal printout or even no printout at all.

Some programs offer a similar option in their print dialogs (e.g. in the LibreOffice print dialog) - then you should use that option instead.

Duplex Mode

Select the appropriate duplex mode. You can choose between „automatic duplex“ (if supported by the printer) and „manual duplex“ (all printers).

In manual duplex mode all odd pages are printed first (pages 1,3,5,...). Then a dialog is shown that asks you to turn the pile of printed pages and to feed it again into the printer. The paper should be inserted in a manner that the back of page 1 will be printed on next.



After pressing „continue“ all even pages are printed (pages 2, 4, 6,...)

These options are available as Duplex Mode:

Auto – automatic duplex printing (only printers with a duplex unit)

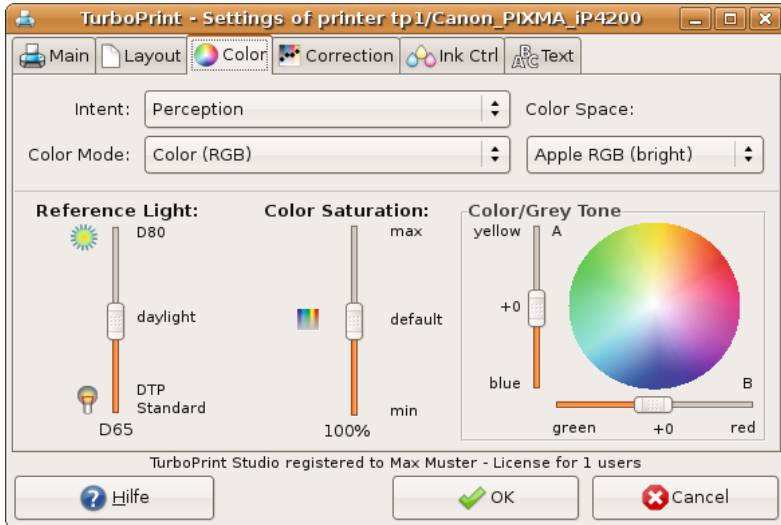
Manual – manual duplex printing – printed pages must be turned over by the user

Manual reverse – manual duplex printing for printers with cassette feeders (default for HP printers)

If „Manual reverse“ is selected, the odd pages are printed in reverse order. This is necessary for printers which print on the lower side of the fed paper (e.g. most laser printers and HP-inkjets).

If front and back sides of your printed documents are in an incorrect order, change from „manual“ to „manual reverse“ (or vice versa).

8.3 Index card „Color“



Intent (Rendering intent)

(only TurboPrint Pro and TurboPrint Studio)

As the color spaces of your computer display and your printer are different (printers normally cannot reproduce as luminous colors as displays can) an exact reproduction of all colors is not possible. Therefore you need to make a compromise. It is up to you to decide how the colors of your document shall be transferred into printable colors. With some printer drivers not all rendering intents are available as they are not yet provided with new TurboPrint color profiles. If there are no TurboPrint profiles available for your printer you can generate an individual color profile - see chapter [“10. Profiles - color profile administration”](#).

The following rendering intents are available:

Perception – Standard setting

The color space of the document is reduced to fit into the printer’s color space. All colors are shifted homogeneously in a way that the overall perception of the image colors will not be changed. As it is mostly the very intense colors that cannot be printed, color saturation and contrast will have to be reduced slightly. Thus the color balance of the printout will be correct.

Perception Photo – optimized for photographs

The color reproduction is optimized for digital photos. Contrast and color saturation are reduced as little as possible to achieve vivid and brilliant colors. As a consequence some details may be lost in very dark or very saturated parts of the image.

Perception Inksave - optimized for low ink consumption

Color reproduction is also optimized for digital photos, but some additional steps taken to reduce ink consumption. Ink consumption is decreased only to a certain extent to keep the image quality as high as possible. Additionally all colors are reproduced a bit “cooler” to save yellow ink and very intense colors are printed a bit less saturated.

With this setting you save on average about 20%-35% of ink without a noticeable loss in print quality. (even in comparison with the original printer driver of the printer manufacturer).

Saturation

The color reproduction is optimized for diagrams and charts but not suitable for digital images. The printer driver tries to achieve very luminous colors.

Colorimetric Absolute (TurboPrint Studio only)

This setting is designed especially for printing CMYK documents in prepress production. All colors that can be printed will be reproduced exactly. However colors that cannot be printed must be reduced in saturation. Depending on the paper used, details could be lost - especially in darker or very luminous parts of the image.

When printing standard RGB documents with this intent, only a small part of the colors can be reproduced exactly (RGB color spaces are bigger than CMYK spaces and especially many dark colors cannot be reproduced exactly). Thus this intent is not useful for printing RGB documents; RGB pictures appear too dark in this mode.

Colorimetric Relative (TurboPrint Studio only)

Same as above but in addition the white point of the document is adapted to the white point of the chosen paper. This intent should be used when printing with the „CMYK-Proof“ mode (see below).

No Correction (for printing color charts)

Color management is switched off, printed colors will not match document colors. This setting should only be chosen to print a profile chart when creating an ICC profile.

Color Mode

Specifies whether the printout is done in grayscale or in color. You can choose between the following options:

Grayscale

For printing grayscale documents with photos use this setting as the dithering quality is better than in the “grayscale fast” mode. Only black ink is used. The calculation of print jobs takes longer than in the “fast” grayscale mode.

Grayscale Fast – default setting for B/W printers

This mode produces fast printouts without colors at a medium dithering quality. Use this mode with fast printers when printing larger documents.

Gray Photo

Recommended setting for high-quality black & white photos. Brighter shades of gray are printed by mixing primary colors, thus looking less grainy. On some printers also grey photo ink is used. This is the only „Gray” mode where “Color / Grey Tone” settings take effect (e.g. to achieve a sepia color balance).

Color - RGB – default setting for color printers

This is the correct setting for printing most documents or photos in color. TurboPrint assumes that the colors of your document belong to an RGB color space (which you can specify with the “Color Space” control).

Note for professionals:

Documents that are already separated into the four standard colors “CMYK” for pre-press must be printed in “CMYK Proof” mode described below. This ensures that the colors will be processed correctly. TurboPrint cannot detect the color mode (CMYK or RGB) automatically. If you get major color deviations the reason may be that RGB mode was used with CMYK data.

Special color modes of „TurboPrint Studio“

TurboPrint Studio offers two additional color modes for printing „proofs“ in prepress production. These color modes are designed especially for printing PDF- and Postscript documents based on the CMYK color model.

CMYK Proof – only TurboPrint Studio

CMYK Proof (Mix Black) – only TurboPrint Studio

In “CMYK Proof” mode the black (“K”) color channel of the document is printed using black ink. Thus colors can be reproduced more exactly.

In “CMYK Proof (Mix Black)” mode lighter shades of gray are printed by mixing

primary colors. Thus shades of gray are looking less grainy.

When using CMYK color mode specify the CMYK color space with the "Color Space" control. TurboPrint cannot detect the color mode automatically.

Hint: If you get major color deviations, the reason may be that inappropriately CMYK-Proof mode was used with RGB data.

Color Space (color profile of document)

(only TurboPrint Pro and TurboPrint Studio)

This control specifies how the colors of a document will be interpreted. There exist different RGB and CMYK color spaces. Thus, to correctly interpret RGB or CMYK values TurboPrint needs to know to which color space they belong. There are different RGB and CMYK color models as they are referring to certain displays (RGB) or press colors (CMYK).

The following color models are available in TurboPrint – additional profiles can be added with the TurboPrint Toolbox:

RGB-Profiles

sRGB (default setting for mode "Color")

This is the most common RGB color space for digital photos on PCs and for digital cameras. (Gamma value approx. 2.2)

● **Apple RGB**

This color space is used with most Apple Macintosh computer displays. (Gamma value approx. 1.8 -> Pictures will be printed brighter than with sRGB)

If your documents are printed too dark with "sRGB" choose "AppleRGB".

The following RGB color spaces are less common and should only be selected if your document is actually referring to the respective RGB color space.

● **CIE RGB**

● **NTSC1953** – RGB standard of the US television system

● **PAL** – RGB standard of the European PAL TV system

● **SMPTE-C**

● **WIDE RGB**

Additional RGB color spaces can be added with the color profile administration menu by loading the appropriate ICC color profile (see chapter "[10. Profiles - color profile administration](#)").

CMYK-profiles

(only TurboPrint Studio – available when printing documents in CMYK color mode)

The first three profiles are „generic“ profiles, which approximately reproduce the colors of printing presses of the corresponding region.

Additional ICC-profiles can be added with the color profile administration (e.g. a color profile provided by a printing house)

EURO (default setting in color mode „CMYK Proof“)

color space compatible to the European standard for offset printing

USA

color space compatible to the American standard for offset printing

JAPAN

color space compatible to the Japanese standard for offset printing

ISO Coated v2 (ECI)

European standard profile for offset printing - included with the kind permission of ECI, the European Color Initiative. The most current version and additional profiles are available on the web site www.eci.org.

This profile is a common standard in offset printing.

Reference Light

(only TurboPrint Pro / TurboPrint Studio)

Choose for which illumination the colors of your printouts shall be optimized.

Technical background:

Colors look different when illuminated with different lighting, an effect that is also known as color metamerism. The red colors of a photo look more intense when viewed in artificial lighting (e.g. a desk lamp) than when viewed in daylight. That's why a photo may look correct in artificial light but pale when viewed in daylight - or vice versa, a picture that looks good in daylight may look reddish when viewed with a desk lamp. The intensity of this effect depends very much on the ink and is therefore not relevant for some printers.

This is also important for prepress simulation (proofing). Printouts with different printer models (and hence with different inks) can be nearly identical only at a certain type of illumination.

The illumination is specified by the color temperature. The settings range between D50 (good artificial light) and D80 (bluish daylight). The average daylight corresponds to D65.

Light with 5000K color temperature (D50) is the reference illumination for prepress.

When printing digital photos better results are normally achieved with reference lighting set to D65 to D80 (warmer skin colors, prevention of blue color tones turning purple).

With ICC color profiles only measurement data for D50 light are available. If a different illumination is chosen an approximation will be used (chromatic adaption formula).

Color Saturation

Change the color intensity with this slider:

Higher intensity => more vivid colors

lower intensity => less vivid colors

This setting is not effective with the rendering intents “Colorimetric Absolute” and “Colorimetric Relative” as these intents exclude any color space modification.

Color / Grey Tone

Use this control to change the color or gray balance. This setting relates to the CIELab color system which describes a color by three components:

L = Brightness: 0 = black ... 100 = white

A = color component 1: negative = green, positive = red

B = color component 2: negative = blue, positive = yellow

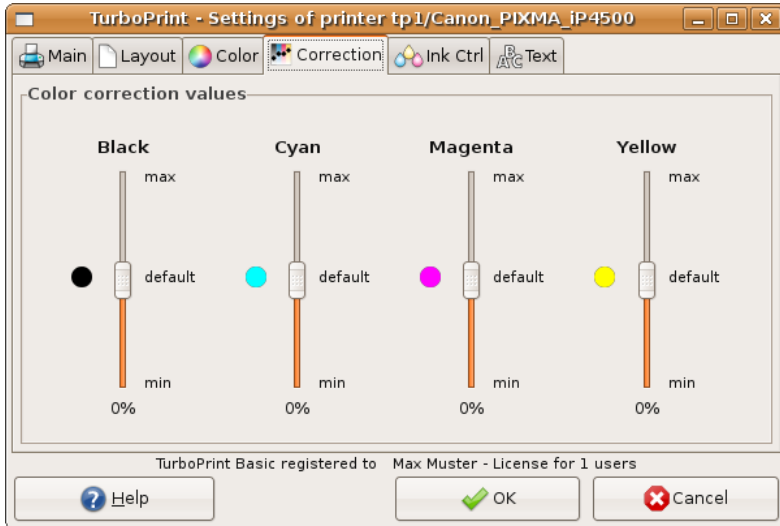
With the slider „A“ the color balance can be turned more greenish (negative values) or more reddish (positive values). Comparably the slider „B“ turns the color tuning more bluish (negative values) or yellowish (positive values).

The “Color/Grey Tone” setting is disabled when printing with the rendering intents “Colorimetric Absolute” or “Colorimetric Relative”.

Note:

Tuning the color balance slightly bluish (e.g. B = -5) does not only comply with our viewing habits (e.g. most types of paper have bluish optical brighteners) but as a side effect also reduces ink consumption (yellow is the color consumed most when printing photos). This may be a reason why many manufacturer's printer drivers print slightly bluish.

8.4 Index card „Correction“



Individual color correction

If necessary, use these controls to correct color reproduction by adjusting the intensities of black, cyan, magenta and yellow ink. This may be useful if you use different ink and / or paper. Of course, color reproduction can be corrected more accurately by creating an individual color profile.

With the option “use individual color correction” you can enable or disable these controls.

Attention:

These controls influence all color modes, even the colorimetric intents. Thus color reproduction of a perfect color profile would be falsified. Use these controls only if you are unsatisfied with color reproduction and need to adjust a color cast.

Black

Adjusts the amount of black ink. The higher the value, the more black ink is applied.

Cyan

Adjusts the amount of cyan ink (light cyan ink is adjusted in the same way, if present).

Magenta

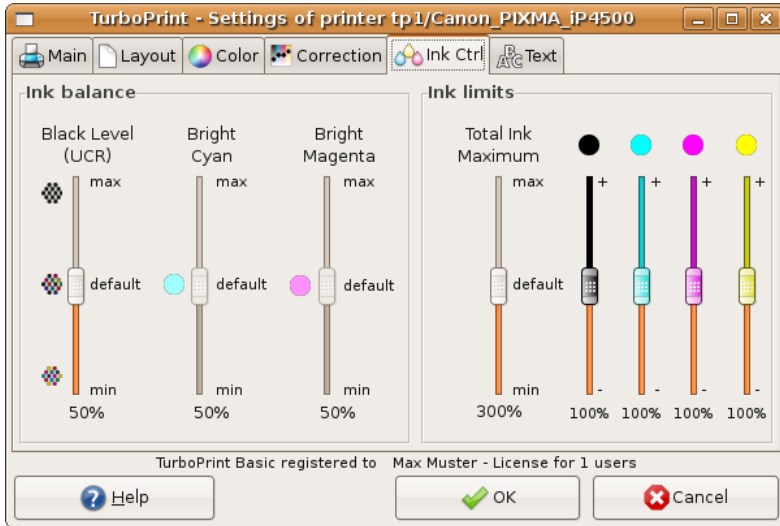
Adjusts the amount of magenta ink (light magenta ink is adjusted in the same way, if present).

Yellow

Adjusts the amount of yellow ink.

8.5 Index card „Ink Ctrl“

This index card is not available in the “Basic” version of TurboPrint



The controls of this menu page enable you to optimize the print quality or to reduce the ink consumption – whereas high quality and low ink consumption are not necessarily mutually exclusive. With TurboPrint you can save ink without a noticeable loss in print quality.

Black Level / UCR (under color removal)

The generation of greyscales with colored or black ink is influenced with this slider. The advantage of using more black ink is a lower ink consumption whereas mixing greyscales with more color leads to smoother and less grainy colors. Bright tones of gray are ideally generated with colored ink, whereas with darker gray tones, black ink is used increasingly instead of using colors. The “black level” control determines the usage of black ink when mixing colors.

In the default setting black ink is only used in darker gray tones to avoid visible black dots.

Shifting the slider upwards leads to black ink being used for brighter gray tones and further replaces more color by black ink in the darker gray tones. Each drop of black ink drop substitutes for three drops of colored ink – in this way a considerable amount of ink can be saved. As a drawback, your printout may be slightly rougher.

In contrast, shifting the slider downwards leads to even darker gray tones being printed using colors without using black ink. As a result you get finer gradations but the ink consumption will be higher.

Note:

This control is only available if pure black ink can be used. Some printers only use pure black when printing on plain paper.

This function is not supported when using ICC printer profiles.

TurboPrint Studio: In “CMYK Proof” mode the mixing of black is performed according to the CMYK data of the source document as much as possible. When reproducing color tones that the printer cannot produce as prescribed there may be modifications of this precept – e.g. additional color may be added to black tones in order to obtain a deeper black.

The setting “Black Level (UCR)” is not effective for the color mode “CMYK Proof” mode. However it affects the “CMYK Proof (mix black)” mode.

Bright Cyan / Bright Magenta / Photo Inks

(These controls are not available with ICC color profiles)

The use of the additional colors “bright cyan” and “bright magenta” of photo printers can be controlled with these sliders. You can reduce the use of the bright inks (values < 50) by replacing them with the corresponding dark inks. This results in a decreased total ink consumption but produces slightly grainier printouts. Conversely you can use more bright inks with values greater than 50.

When using printers with combined ink cartridges (several colors within the same cartridge) the consumption of all colors should be balanced – i.e. if significantly more bright cyan has already been consumed than dark cyan, you should shift the slider downwards to save bright ink (respectively upwards to save dark ink).

Depending on the internal color profile, there are either two sliders for controlling the usage of “bright cyan” and “bright magenta” separately, or a single “Photo Inks” slider that changes the usage of both inks concurrently.

Ink Limits

Total Ink Max

With this control you can limit the maximum amount of ink applied per printer dot. Its purpose is mainly to prevent an over-soaking of the paper and “bleeding” of the colors.

For example “300%” means that a maximum of 100% of the yellow, magenta and cyan inks may be applied at the same time. With “400%” an additional 100% of black ink may be applied.

Higher values cause a richer black (with higher ink consumption), lower values result in a lower ink consumption (with a lower intensity of black).

If excessive ink is applied resulting in smearing (“bleeding”), you can reduce the amount of applied ink by shifting this slider towards lower values. (You may also use the control “Color Saturation” of the “Main” index card).

Separate ink limit sliders for black, cyan, magenta and yellow inks

With these controls you can limit the maximum applied amount of every ink color separately. As only highly saturated colors are affected, most colors will remain unchanged. With its integrated color profile generator, TurboPrint tries to adapt the affected colors as much as possible to keep the overall color balance unchanged.

The intensity of colors does not increase linearly with the amount of applied ink. Instead it increases similar to a saturation curve, i.e. in the upper region an application of 20% more ink results in only a 1% increase in color saturation. By cutting back in this region, you can save ink quite effectively without a noticeable loss in print quality. Hence ink is saved in the portions of the image with intense colors.

In case of a printer with a combined ink cartridge (several colors within the same cartridge) it is important to preemptively reduce the limit of the ink that tends to be used up first (in most cases the yellow ink) - this way the lifetime of the cartridge can usually be prolonged up to 30%.

Also you can reduce the amount of ink consumption with single ink printers by cutting back the ink peaks - and you can use this setting without having to consider the remaining ink levels.

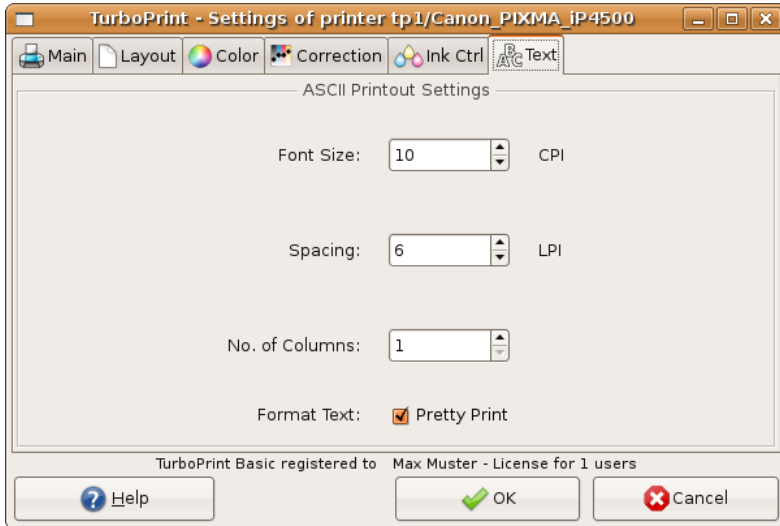
If you have chosen „Perception Inksave“ as rendering intent some ink limits are already active. The “Separate Ink Limits” controls will then additionally reduce the ink limits (sliders downwards) or lessen the limitations (sliders upwards).

Exception - black ink limit:

To achieve very dark shades of colors not only pure black ink is used but the color inks yellow, magenta and cyan are added.

The control “black ink limit” does not change the use of the black ink. Instead the amount of color inks which are added to dark shades is changed. As a result the consumption of color inks is reduced when lowering the black ink limit. If you increase the black ink limit, more colored ink will be added to dark gray and black areas - resulting in deeper and darker gray/black shades.

8.6 Index card „Text“



Font Size

Select the desired font size for printing ASCII text. The entered value is measured in CPI (characters per inch).

Spacing

The line spacing is determined by the entered number of lines per inch (LPI).

No. of Columns

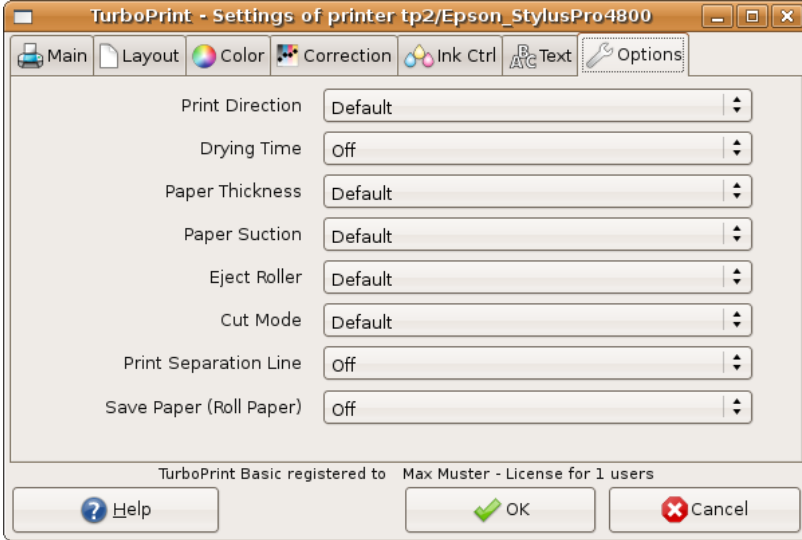
Specify the number of text columns on the page (default = 1).

Format Text

By choice your ASCII text can be formatted when it is printed. If you activate the "Pretty Print" button headers (file name and page size) will be added to the printout and key words will be highlighted (such as "and", "or").

8.7 Index card „Options“

All printer specific options are arranged on this index card, e.g. settings for roll paper cutter, ink drying pauses, etc.



This index card is only shown if any printer specific settings are available.

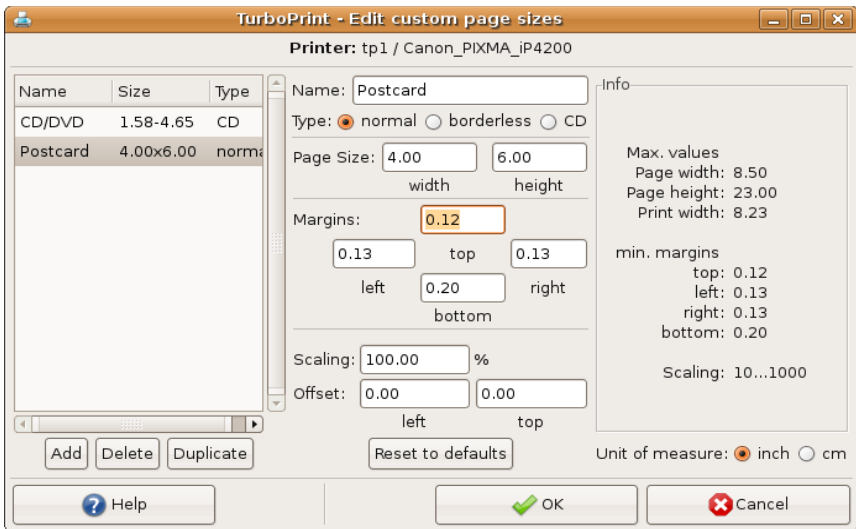
9. Custom page size editor

New printer specific page formats can be defined in this dialog. This is especially important with large format printers and / or roll paper for efficient paper usage.

It is also possible to adjust the printable area of CDs / DVDs – you can specify the CD/DVD diameter and the area around the center hole that cannot be printed on.

Moreover you can set a scale factor (e.g. enlarge from A5 to A4 size) or enter offsets to adjust print position on the page.

You can reach the custom page size editor from the TurboPrint control center program with the button “**Sizes**”.



Page size editor

All user defined sizes are shown in the list on the left. Page size, margins, scaling and offsets are displayed (or entered) in the middle of the dialog window. An information field on the right shows maximum paper size and minimum margins. The unit of measure can be switched to either “inch” or “cm” (1 inch = 2,54 cm) on the bottom right.

9.1 Adding a new page size

Use the button “Add” to add a new page size. A new list entry named “new

format” will appear – you can change the name in the field "name". Choosing a significant name will make it easier to find the size in the application's page setup.

Three different page types can be chosen:

- **normal**
- **borderless** (not possible with all printers)
- **CD** (only for printers that can print on CDs)

Page format “normal” and “borderless”

Please make sure that the correct „**Unit of measure**“ = “inch” or “cm” is selected.

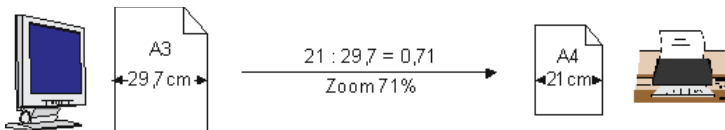
For regular page sizes please enter the dimensions of the paper. The printable area is defined by the left, right, top and bottom margins. For technical reasons most printers leave a small margin at the paper edges, which means that margins must not be smaller than the minimum margins listed in the table on the right.

Some printers can print “**borderless**” but only for certain standard page sizes or certain print widths. One reason is that only for certain sizes ink absorbers are present that prevent ink from getting into the printer mechanics. This means that even for those printers only certain borderless custom page sizes can be defined.

Scaling:

This setting is for scaling print size. For example an A3 sized document can be printed on an A4 printer without having to reformat the document – or an A4 document can be automatically enlarged and printed on A3 paper.

The scale factor can be defined in percent, “100%” means that no scaling is performed. Page size and margins always refer to the actual print size.



Example: Define a custom page format that reduces A3 documents to A4 size

Enter 21.0 x 29.7 cm (or 8.27 x 11.69 inch) – the actual print size is A4. Page margins are left at minimum. The scale factor is calculated as print size divided by document size:

$$21\text{cm} / 29.7\text{cm} = 0.707 \Rightarrow \text{“71\%” is the correct scale factor}$$

In the application program the dimensions of the new page format will be A3.

If no scaling is desired, enter 100%.

Offset

On some printers paper is not exactly positioned due to mechanical tolerances. Thus the printout may not be positioned exactly as defined by the driver (e.g. printout is shifted to the left or right). Use the “Offset” fields to correct the print position.

The “left” offset specifies how much the printout should be shifted to the right. E.g. 0,1cm means the printout will start 0,1cm further to the right.

This correction is not visible in the application program, only the printer is affected.

Please note that specifying an offset will increase unprintable margins. Moving the printout to the right (left) will increase the unprintable right (left) margin. Accordingly moving to the bottom (top) will increase the unprintable bottom (top) margin.

CD printable

For CDs / DVDs the diameter of the inner circle (center hole) and outer circle can be specified. Also an offset can be specified to adjust the printout horizontally & vertically.

A negative value in the field “**left**” or “**top**” will shift the printout to the left or top, a positive value will shift to the right or bottom.

Deleting a custom page size

Pressing the “Delete” button will delete the currently selected custom page size. No warning will be shown. However, you can undo all changes by leaving the custom page size dialog with the “Cancel” button.

Duplicate

This button duplicates the currently selected page size.

Reset to defaults

Pressing this button will reset page dimensions to maximum values for this printer. Page margins will be reset to minimum values.

Select "OK" to confirm your changes in the custom page size menu. "Cancel" will discard all changes since entering the page size menu.

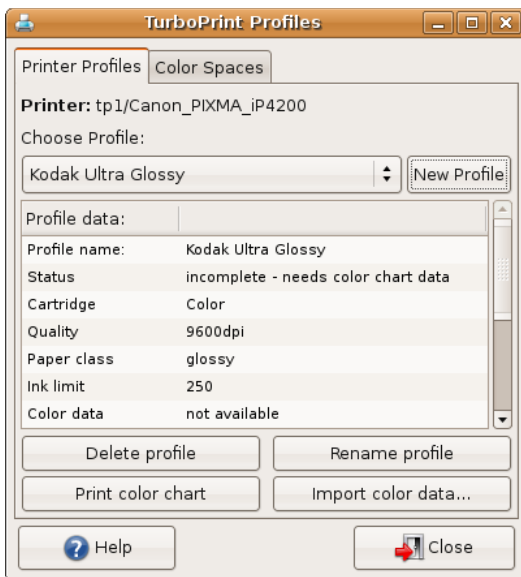
10. "Profiles" - color profile administration

The button "Profiles" on the main window of the TurboPrint control center program opens the color profile administration menu.

In TurboPrint's profile administration there are two categories of profiles: **Printer profiles** describe the color conversion for a certain printer, type of paper and ink. **Color spaces** describe colors in documents and how they should be interpreted / printed.

10.1 Index card "Printer Profiles"

Here you can find the list of TurboPrint color profiles that you have added to your printer. Only profiles that were created individually for your printer are listed, so initially the list is empty.



List of color profiles

In the drop down list "Choose profile" you can find the profiles that have been added for the current printer. The following information is shown for the selected profile:

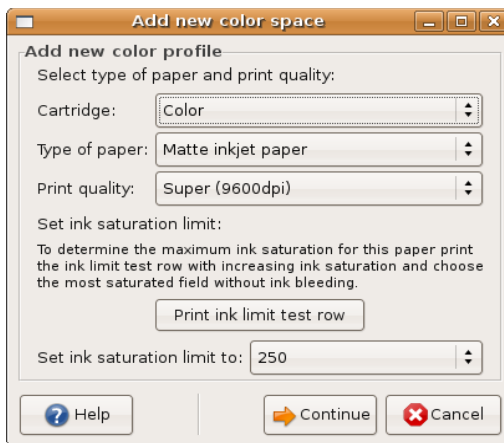
Profile name with this name the profile is listed in the print dialog's "Media

	type" or "Paper type" selector
Status	"incomplete" after creation of a new profile entry, "complete" when color profile data have been assigned using "Import color data".
Cartridge	additional print options (only available for some printers)
Quality	print quality for which the profile was made
Paper class	type of paper, e.g. plain paper, glossy photo paper etc.
Ink limit	the maximum ink saturation
Color data	name of color profile and type (ICC / ZEDOnet)
Driver	name of printer driver
User	name of user the profile was created for
Paper manufacturer, Paper, Ink manufacturer, Ink:	additional information on profile

"New Profile"

First create a new profile entry with the button "New profile". This entry is "empty", i.e. it doesn't yet contain color correction tables. The new entry can be used to create a new profile using our ZEDOnet profile creation service. If you have the necessary equipment (spectrometer, profile creation software), you can also create and add your own ICC profile.

In the following dialog please select the type of profile you want to create:



In the section “Select type of paper and print quality” choose the desired print parameters for the new profile. It is important to choose these settings carefully because color reproduction depends on print quality, maximum ink saturation, type of paper, etc.

The setting “Cartridge” is only available for some printers. It is used to control printer specific settings like “color” or “photo” print cartridge inserted, gloss optimizer on/off, “matte black” or “glossy black” ink used. Choose the setting that shall also be used for later prints with this profile.

Specify the **type of paper**:

- **Plain paper** for normal paper, e.g. copy paper / (color-) laser paper
- **Matte inkjet paper** for matte coated inkjet paper (not for matte photo paper)
- **Glossy paper** for high quality photo papers (glossy, semi-matte / semi-glossy or pearl)
- **Transparency** for projectors
- **Other paper** for a paper that does not match any choice above
- **Fine Art paper** thick, matte paper usually with a rough surface (“artist’s canvas”)

You must also select the **print quality** (print resolution) you want to print with on the chosen paper. In many cases you will select the highest quality. A profile can be used with all resolutions but the best results will be achieved with the resolution at which the profile chart was printed.

The “**Ink saturation limit**” specifies how much ink can be applied to the paper. The default (“300%” for CMY/RGB printers, “250%” for all other printers) will give good results in most cases.

Depending on the paper, a different level of ink is needed to achieve maximum color saturation. The more ink is applied, the more saturated colors can be printed. However, if too much ink is applied the ink will flow (“bleeding”).

Therefore you can determine the maximum ink level for the chosen paper by printing a line with increasing ink levels. This can be done with the “**Print ink limit test row**” button. You can use the same sheet of paper for this test row that you will use later for printing the color chart.

In the printed ink limit test row, find the box with the highest ink level where the ink does not flow and dries within a few minutes. Set the “ink saturation limit” control to the value printed in this box.

Attention:

If the value you choose is too high, the colors of your profile chart will float

and the chart cannot be measured. If the paper transport rolls of your printer smear the printed boxes of your profile chart, you will need to reduce the ink saturation limit and reprint it.

Press "continue" to get to the next dialog page.

Enter a name for your profile and supply information on paper and ink. The profile name will be visible in the print dialog later – choose a significant name so that you will be able to choose the correct profile. Information on paper and ink will be visible in the profile management menu.

Press "Continue" and you will see a summary of all profile information.

"OK" will finally create a new entry in TurboPrint's list of printer profiles.

Important:

- The new profile doesn't yet contain any color correction data. Only when you import ZEDOnet or ICC color correction data the "empty profile" will be completed and usable for printing with correct colors.
- If your printer supports automatic calibration / linearization, you need to execute the "Linearize" function before printing a profile color chart (see below).

The next step will be printing a color profile chart (see below).

Profile actions

Delete profile

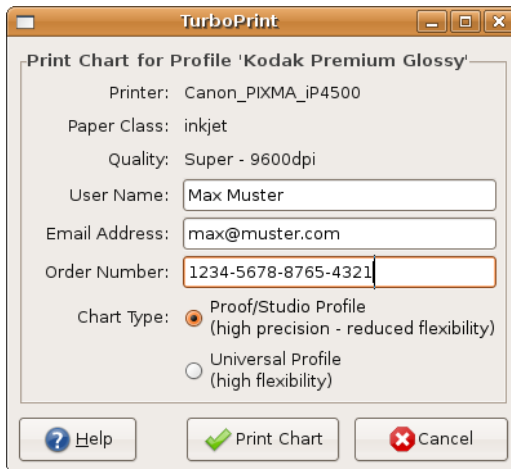
The currently selected profile will be removed from TurboPrint's list of printer profiles.

Print color chart (for ZEDOnet profile creation service)

With this function you can print a color chart for ZEDOnet profile measurement service. (If you want to create an ICC profile with your own measurement equipment read the next section).

We offer a low cost measuring-service for users of TurboPrint. Send us your printed color chart by mail, and we will measure it and return your individual color profile by email.

Some information will be requested before the color chart can be printed:



The image shows a screenshot of a software dialog box titled "TurboPrint". The main title of the dialog is "Print Chart for Profile 'Kodak Premium Glossy'". The dialog contains the following fields and options:

- Printer: Canon_PIXMA_ip4500
- Paper Class: inkjet
- Quality: Super - 9600dpi
- User Name: Max Muster
- Email Address: max@muster.com
- Order Number: 1234-5678-8765-4321
- Chart Type: Proof/Studio Profile (high precision - reduced flexibility) and Universal Profile (high flexibility)

At the bottom of the dialog, there are three buttons: "Help" (with a question mark icon), "Print Chart" (with a green checkmark icon), and "Cancel" (with a red X icon).

Enter your name and the email address where we shall send the profile data.

In the next line enter the **order number**. To be able to offer the profile measurement service at a low price we have set up an internet order system where you purchase an order number first (at www.turboprint.info).

By indicating this order number you prove that the measuring fee is already paid and ensure that you will be sent your individual profile by email without any further requests.

You can choose between two **Chart types**:

- **Proof / studio** for higher color precision
Profiles created with this chart type only support a limited number of “ink control” settings in the print dialog (with photo printers the usage of bright cyan and bright magenta cannot be set individually). These charts contain more color shades but less combinations of photo inks and the corresponding regular inks (e.g. photo magenta and magenta).
- **Universal profile** for higher ink control flexibility
With this profile all ink control settings are available in the print dialog.

Now insert the sheet of paper where the ink saturation row was printed on.

Important: Make sure that you rotate the sheet so that it will be printed on the blank section (i.e. insert the paper with the blank section leading – so the test row would be overprinted last)

Start the printout by pressing **"Print chart"**. It will take some time until the printer starts printing since the color chart must be calculated first.

Let the printed page dry for at least two hours and do not touch it. Put this color profile chart (do not fold it) in a robust envelope and mail it to:

ZEDOnet GmbH
- TurboPrint color profiles -
Sedanstrasse 8
D-87600 Kaufbeuren
Germany

Since all information needed is printed on the profile sheet, you do not need to include an accompanying letter. Within approx. 14 days after your chart arrives, we will send the calculated TurboPrint profile to the email address you specified.

Import color data

Imports color correction data for the currently selected profile entry. Files from ZEDOnet profile creation service or user-created ICC profiles are accepted. Choose your profile data file in the file selection dialog.

Please note: Application programs may have to be closed and opened again before the new profile is available in the print dialog.

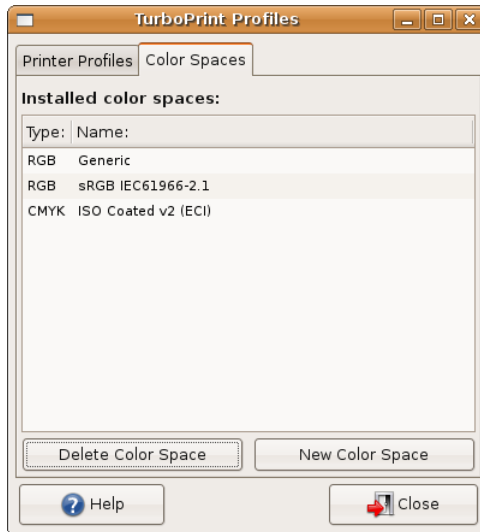
The new profile will be shown in the “Paper Type” or Media Type” selection of the print settings.

Rename profile

Change the name of the profile which is shown in the print dialog as "paper type" or "media type".

10.2 Index card "Color Spaces"

Color spaces are required to interpret the colors of a document. The TurboPrint driver must be set to the same color space that is used in a document or application program. Some common color spaces are already predefined in TurboPrint. Additional color spaces can be added as ICC profiles using this dialog.



Select **"New Color Space"** to add an ICC color profile. Color profiles for RGB devices (e.g. monitor, scanner, digital camera) and CMYK devices (e.g. offset printing) can be imported and used for printing RGB or CMYK documents.

Select your ICC profile in the file selection dialog - TurboPrint will display the profile name, copyright and profile type (RGB / CMYK). Press "OK" to install the profile.

After adding the profile, an additional RGB or CMYK color space will be available in the print settings (index card "Color") and also in applications that offer TurboPrint settings in the print dialog. Please note that the correct "Color Mode" must be selected (Color RGB / CMYK Proof) to have the new color space listed. An application program may have to be restarted before the new color space will be available.

The button **"Delete Color Space"** removes the selected color space from the list.

10.3 Creating individual color profiles

Individual color profiles can either be created inexpensively by the ZEDOnet profile creation service, or by yourself if the necessary measurement equipment is available.

First create a new profile entry with appropriate settings (e.g. Paper class, print quality) in TurboPrint's profile administration (as explained in section "[10.1 Create a new profile](#)").

After that print a "color chart" – a page that contains a large number of color patches that will be measured with a spectrophotometer later:

a) Printing color charts for the ZEDOnet profile creation service

The necessary color chart can be printed with the "[Print color chart](#)" button in the "Profiles" dialog of the TurboPrint control center.

b) Printing color charts for creating ICC profiles with own measurement equipment

If you have the necessary measurement equipment available, you can create your own profiles and use them with TurboPrint.

Depending on the profile creation software, you can create RGB and/or CMYK profiles. Both types of profiles can be used for printing correct colors with RGB and CMYK documents. TurboPrint calculates the necessary conversion automatically.

Advantages and disadvantages of RGB and CMYK profiles

- RGB profiles need less color patches than CMYK profiles for achieving the same color accuracy. If your profile creation software only offers CMYK color charts with less than 500 patches, prefer printing an RGB chart.
- Only with CMYK profiles the generation of black can be determined by your profile creation software. With RGB profiles, TurboPrint always uses its standard way of generating black.

The profile chart cannot be printed via TurboPrint Toolbox but from an appropriate application program. Follow the instructions of your profile creation software.

We recommend to use the application software from which you will print most of your documents. Load the profile chart file that is provided by your profile software.

Before printing you should disable any color management of your application software, if possible. Also choose the output color space appropriately - RGB for an RGB profile, CMYK for CMYK profiles.

In the print dialog choose the new profile as “Media Type” (new profile entries are shown at the end of the list). This “empty” profile is only suited for printing a profile chart (there is no color correction data available yet).

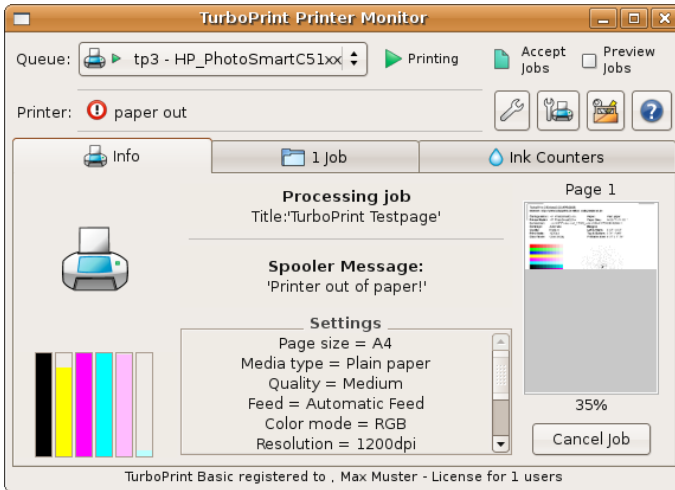
Depending on the type of profile chart set “Color Mode” to “Color (RGB)” or “CMYK Proof”. This is all you need to select – leave the other settings unchanged.

After printing the color chart, measure the color patches with your spectrometer and the belonging software. Have a profile created and save it in ICC format.

The color data of this ICC file can then be imported into the TurboPrint color profile with the option “Import color data...” in the “Profiles” menu of the TurboPrint control center.

11. TurboPrint Printer Monitor

TurboPrint's printer monitor gives you detailed information about your printer, e.g. the printer status ("idle" / "printing" / "paper out"), the remaining ink levels, information about the current print job (print settings and an optional preview), a list of all remaining print jobs and even information on the ink consumption.



Queue

To every installed printer one or more print queues are assigned. The drop-down list "Queue" shows all installed printers with their print queues. Select the print queue that you want to have monitored.

Even printers with non-TurboPrint drivers and network printers are listed. However, for technical reasons, not all status information will be available for those printers.

Print queue state

Next to the "Queue" drop-down list you find two buttons that show and control the state of the selected printer queue. The first button changes the general state ("Idle" / "Printing" / "Stopped"), the second one determines if new print jobs will be accepted.

By clicking the buttons, you can change the print queue state. Depending on

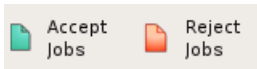
your Linux distribution, you might need to authorize this by entering the administrator password of the CUPS printing system.

The first queue state button controls if the print queue is activated. It can show one of the three following states:



Pressing the button in the “Printing” state changes the state to “Stopped” and cancels the current printout. The document will be printed again from start after changing the state back to active (“Idle” or “Printing”).

The second queue state button divides if new print jobs will be accepted. Two states are possible:

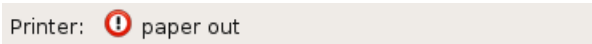


Note: Depending on your Linux system, you might need to authorize changing the print queue state by entering an administrator name and password of the CUPS printing system.

CUPS administrators might have to be set up first in the CUPS printing system – your Linux user password might not be accepted. Read more about CUPS administrators in the documentation of your Linux distribution or the CUPS printing system (headword “lppasswd”)

Field “Printer“

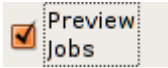
The “Printer” field shows the current status reported by the the printer. Of course these status messages are only available if the printer is connected and switched on.



Note:

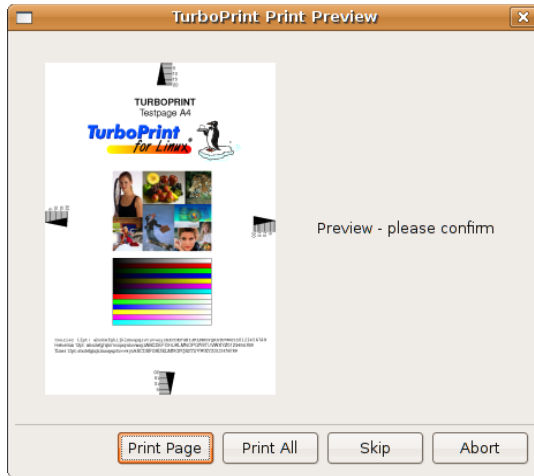
- the printer should be connected via USB interface. Also make sure that the printer is set up with the TP-USB backend driver – otherwise printer monitoring is disabled while printing (see “4.3 Setting up a printer”).
- Printer status messages might not be available for printers connected via parallel interface or via network.
- with certain printers status messages are not supported by TurboPrint

Preview Jobs



TurboPrint enables you to preview every page on the screen before sending it to the printer. Thus you can check if the page was rendered correctly and decide if it shall actually be printed. Especially when printing from web browsers printouts often look very different from what you expected. With the preview function you can avoid misprints and save paper and ink.

Activate the preview function with the “Print Preview” checkbox of TurboPrint Printer Monitor.



After a print job has been started, a preview of every page is presented on the screen. Select “Print Page” to have this page printed or “Skip” to omit it. Pressing “Print All” continues printing without previewing any further pages of the current job. Pressing “Abort” cancels the current print job.

Note: You can enlarge the preview window with the mouse to get a more detailed view of the page.

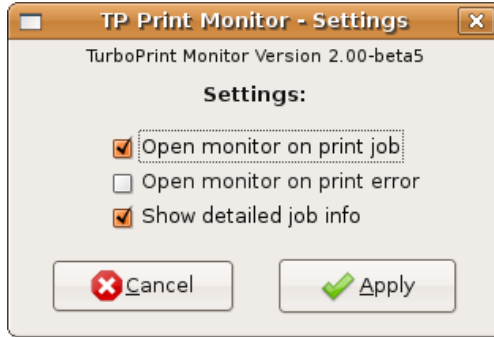
Tool buttons

Next to the printer status message box you find some buttons that open different tools: “monitor settings”, “printer settings” and “printer toolbox”.



Monitor-settings

This menu lets you configure some basic settings of the TurboPrint printer monitor:



Open monitor on print job

If this option is chosen, the printer monitor window is opened automatically when a print job is started by a TurboPrint driver.

Open monitor on print error

The printer monitor is opened automatically whenever any printer error occurs (e.g. If the printer runs out of paper).

Show detailed job info

You can decide how detailed settings of the current print are listed ("Info" card, field "Settings").

If this option is deactivated, only page size, media type, quality and paper source are listed.

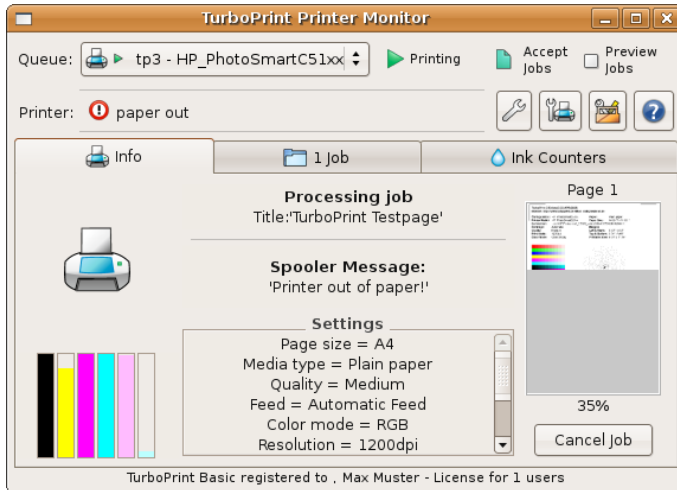
Printer settings

This button opens the print settings menu of the selected printer. You can find a detailed description of this menu in chapter ["8. TurboPrint print settings"](#).

Printer toolbox

Opens the printer toolbox (test page, print head cleaning, etc.) - see chapter ["7. Printer Toolbox"](#).

11.1 Index card “Info“



Left column – printer state and ink levels

If printer status messages are available, the printer status is shown by an animated printer symbol. The symbol can show different states:

- printer not connected / switched off
- idle
- printing
- paper out
- low ink warning
- ink out
- CD needed (when printing on printable CDs/DVDs)
- printer fault
- printer hardware error

Detailed printer status messages are shown in the printer status box (see above).

Below the printer symbol several bars are shown that indicate the remaining ink/consumable levels of the printer. When moving the mouse pointer over one of these bars a tool-tip window shows the ink name and the percentage of remaining ink.

Note:

- ink level reporting is not supported for all printers
- for some printers, ink levels are only shown when connected by USB, not through LAN / WiFi connection
- some printers report ink levels only qualitatively with levels like "ok", "low" and "empty". This can result in reported ink levels falling suddenly from 100% to 25%.

Middle column – current print job

Detailed information on the current print job is shown here:

State (e.g. "Processing job")

Document title (if set by the application)

Spooler messages – these are messages from the CUPS printing system, the printer driver or the interface driver ("backend") which transfers the printer data via network or a local interface to the printer.

Settings – print settings of the current job, e.g. page size, media type, print quality, etc.

Right column – current page

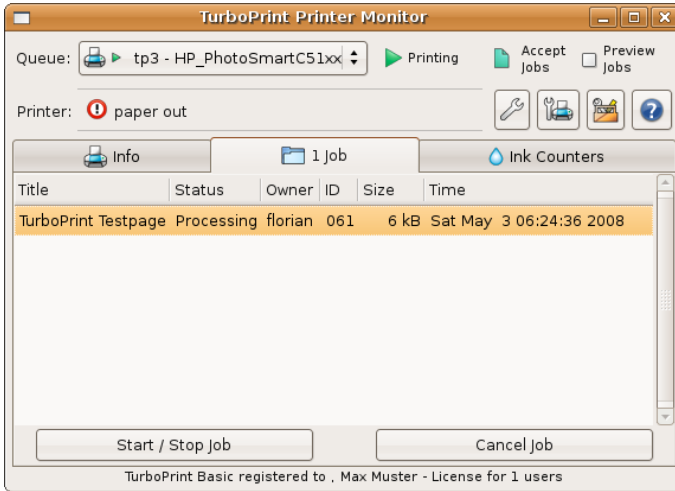
A small image with the page currently being printed is shown. Also listed is the current page number and a counter of the current page's printing progress (percentage).

Note: Print settings and page image are only shown if you are the owner (sender) of the current print job. Detailed information on print jobs of other users is not available (e.g. If the print job was initiated by a different user via the network).

You can cancel the print job with the "Cancel Job" button.

Note: Cancelling print jobs is often not sufficient if the printer is stuck in an error condition like "no paper" or "paper jam". The printer might still have some unprinted data in its buffer which is not cleared by cancelling the print job. A following print job might not be printed correctly then. We suggest to additionally reset the printer by switching it off and on again or by pressing the "Reset" or "Cancel" button on the printer (if existing).

11.2 Index card “Jobs“



The “Jobs” index card shows the current print job and all other waiting print jobs sent to the printer. The table lists the following information for each job:

Title – the document name – if available (set by the application)

Status – processing / held / pending

Owner – name of the user who launched the print job

ID – internal print job ID number

Size – document size in kb

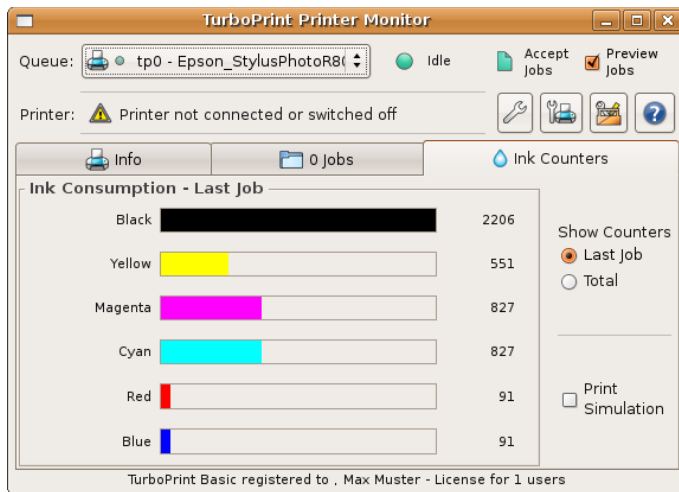
Time – time and date when the print job was sent to the queue

Pending print jobs (that are waiting to be processed) can be put on hold with the button “Start / Stop Job”. Of course you must first mark the print job in the list. This job will not be processed until it is put back into “pending” state again (press the same button again).

Jobs that are already being processed will be stopped and put on hold. However, when activated again, they will not resume at the last printed page but be completely restarted.

To remove a print job from the print queue, press the “Cancel Job” button.

11.3 Index card “Ink Counters”



TurboPrint calculates how much ink is used for every printout. As ink droplets are counted, this cannot be converted into milliliters of ink. However the ink consumption values can be used to compare how much ink is consumed of each color and to evaluate the effect of any ink saving measures.

This index card shows the ink consumption values of the last printout and total values of all previous printouts.

Set the switch “Show Counters” to “Last Job” if you want to see the values of the last job printed – consider that the job must have been finished completely before these numbers will be available. The job state is indicated on index card “Info”.

The “Total” option shows the total ink counters of all previous jobs.

You can reset the ink counters with the TurboPrint control center program (button “Edit” printer → switch “Reset ink counters now”),

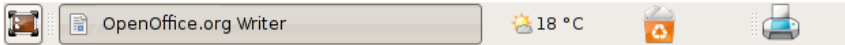
If you activate the “Print Simulation” option, the next document is only processed but not actually printed. Thus you can get a projection of the ink consumption with different settings without wasting ink and paper. The “Print Simulation” option is automatically disabled after the next print job.

You can use the ink counter values for optimizing your print settings. This is especially interesting when a printer is using combined color cartridges (one cartridge containing three or more different inks). The total ink counter values

show which color will run out first – so you can react and reduce the consumption of this color with TurboPrint's ink control settings (see “[8.5 Index card „Ink Ctrl“](#)”). This helps to extend the cartridge life and avoids throwing away cartridges with half of the other inks left.

12. Applet for TurboPrint printer monitor

Gnome and **KDE**, which are the most widely used Linux desktop environments, both have one or several "Panels" in which small utility programs called "Applets" can be placed.



TurboPrint 2 offers a printer monitor control panel applet that shows printer status and offers access to TurboPrint's control center.

The TurboPrint applet shows a printer symbol - different animations visualize the current printer status.

12.1 Adding the Applet

The printer monitor applet is added to the list of available panel applets by the TurboPrint installation program. To make it visible in the panel, you must add it manually. Click on the panel with the right mouse button and choose the pop up entry "Add Applet to Panel...". A list of available applets will be shown – choose "TurboPrint Printer Monitor Applet" from the list. After clicking on "Add to panel" the TurboPrint applet should be visible in the panel.

12.2 Applet Functions

The TurboPrint applet shows a printer symbol - different animations visualize the current printer status.

Left mouse button click

By clicking on the printer symbol with the left mouse button a list of current printer warnings and errors is shown. A click on a list entry opens the printer monitor for the corresponding printer.

Right mouse button click

Clicking on the printer symbol with the right mouse button brings up a context menu - the option "TurboPrint Control" starts the TurboPrint control center.

Double click left mouse button

A double click on the printer symbol opens the printer monitor.

13. Printing with TurboPrint

13.1 Printing from applications

Most Linux programs that have a print dialog option automatically show all printers that have been set up. Many programs also allow to examine and modify the current printer driver settings.

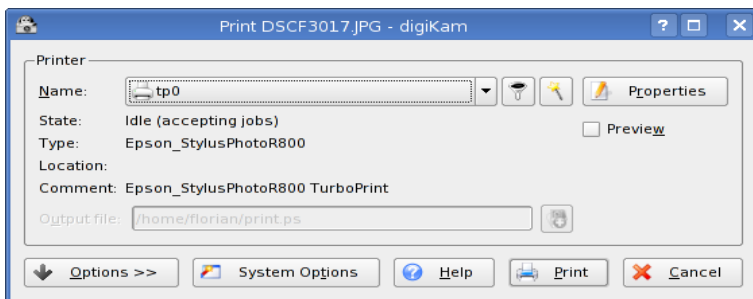
Only few programs like GIMP and Firefox are an exception – here the user has to add a printer before using it for the first time (GIMP) or there is no access to printer driver settings (Firefox). Such programs are covered in separate sections at the end of this chapter.

A specialty of Linux – compared to other operating systems like Windows or Mac OS – is that the print dialog and especially printer driver settings can look quite different in different applications. One reason is that application programmers can use the print dialog from one of the application frameworks (like Gnome or KDE) or program their own print dialogs. Another reason is that there is no standard dialog box for driver settings that a driver could make available to applications.

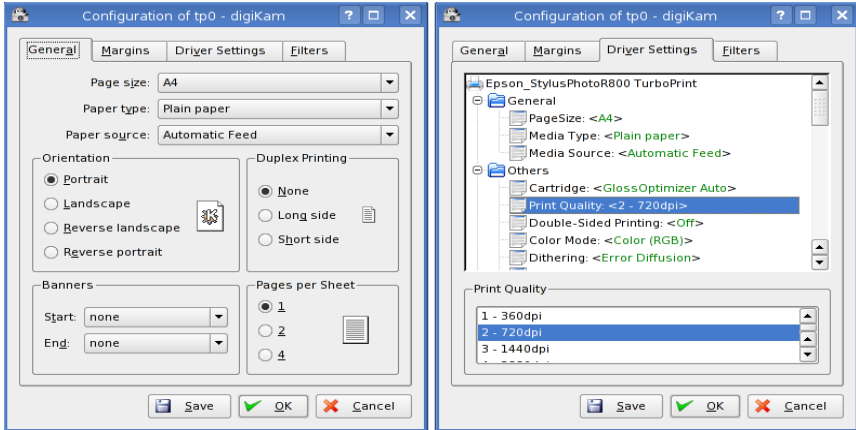
TODO - general section on: how do the driver settings look like in the application print dialog

13.1.1 KDE applications

All programs that were programmed using the KDE application framework – like Konqueror or digiKam – have the same print dialog. First select your printer:



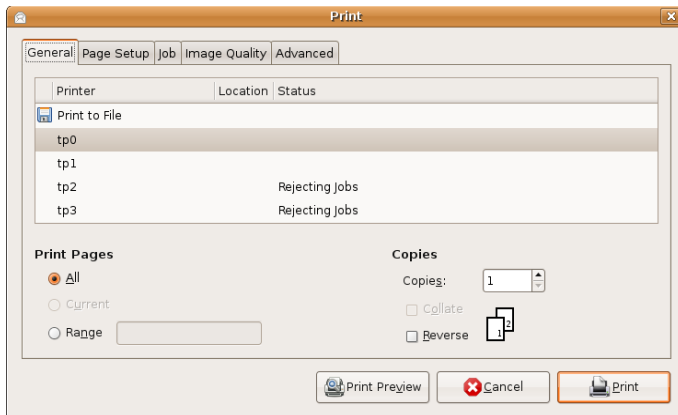
With the button "Properties" you can examine or modify print settings:



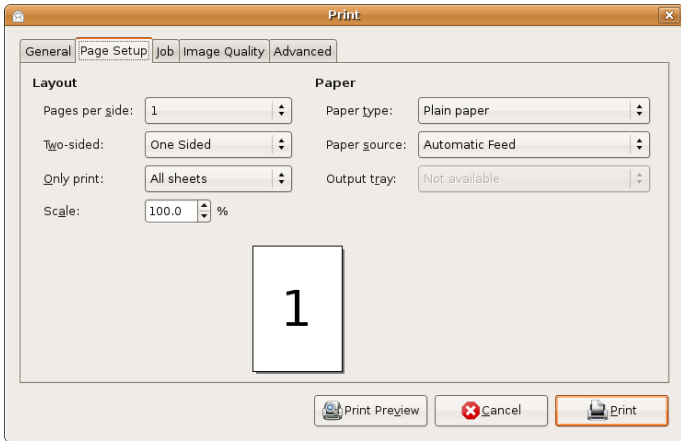
The printer driver settings can be found on the index page "Driver settings". To change a setting, click on an item in the list (e.g. "Print quality") – in the lower part of the window a list of possible settings will appear. Click on the setting of your choice.

13.1.2 GNOME applications

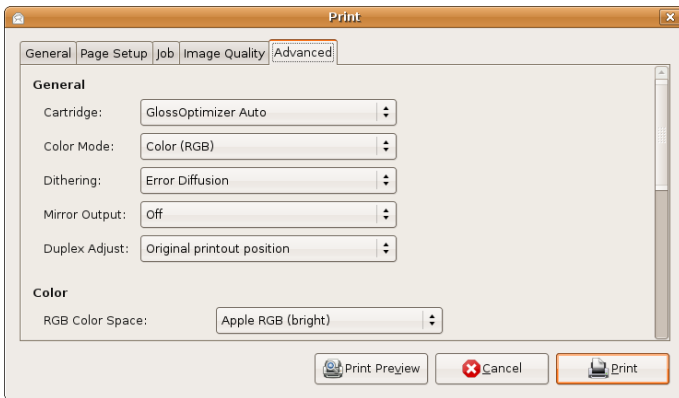
Applications that are based on the Gnome desktop also have a uniform print dialog – Gnome applications are e.g. Evolution, gThumb or eyeofGnome. The print dialog shows all printers that have been set up on the computer:



The index card "Page Setup" contains the "Paper type" and "Paper source" settings:

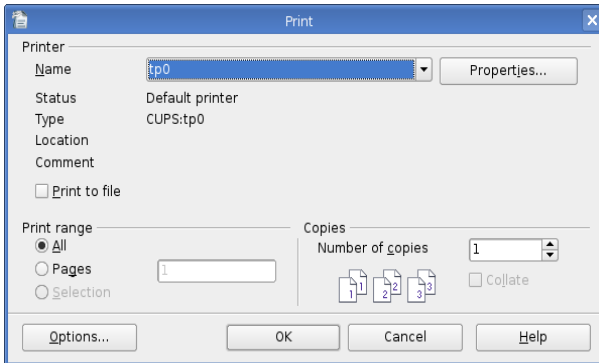


On the index card "Image Quality" you can change the print quality, the index card "Advanced" contains all other printer driver settings:

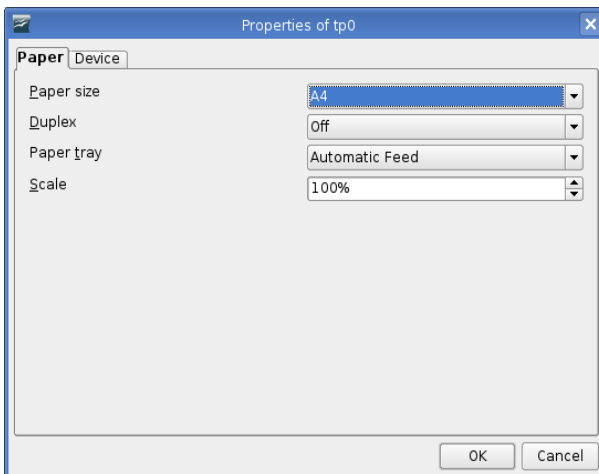


13.1.3 LibreOffice / OpenOffice

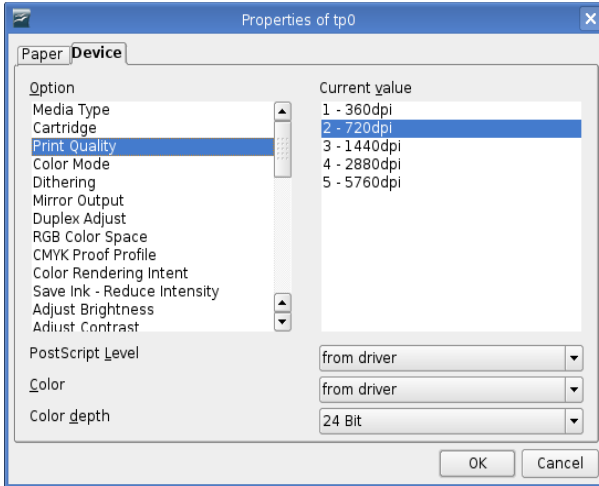
In the LibreOffice / OpenOffice print dialog choose your printer next to the field "Name":



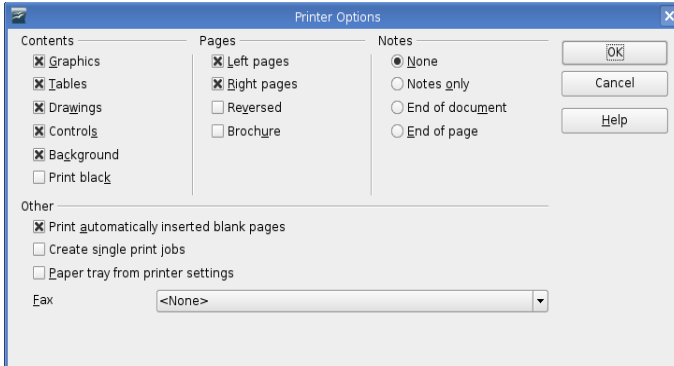
In the dialog "Properties..." you can inspect or adjust printer settings:



You can find other printer driver settings on the index card „Device“:



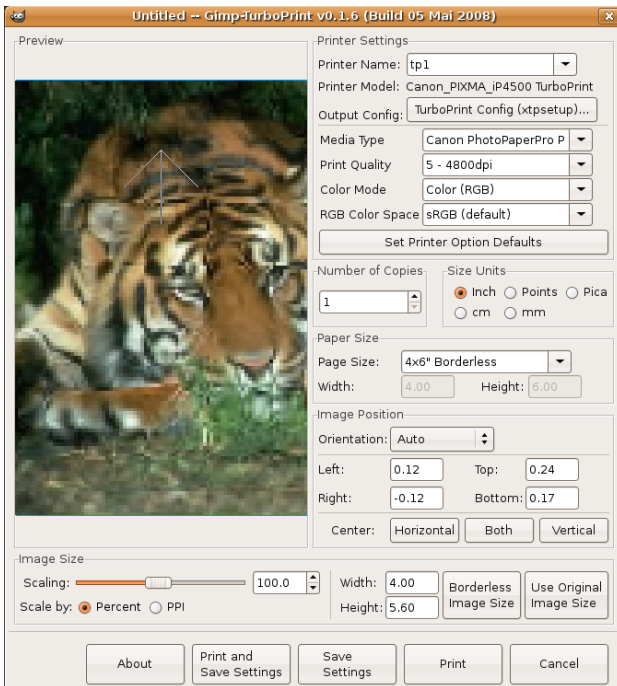
The settings "PostScript Level", "Color" and "Color depth" should be left at their default values "from driver" and "24 Bit" (see screenshot).



In the dialog "Options..." there is an option for printing brochures with two pages on one sheet. In combination with TurboPrint's duplex function you can print booklets – you only have to fold the printed stack of paper after printing on both sides.

13.1.4 GIMP

During installation of TurboPrint optionally a print dialog for GIMP can be installed, which has enhancements for TurboPrint. This dialog can be opened from GIMP with the menu entry "File -> TurboPrint...".



The special print dialog automatically lists all TurboPrint printers – choose the printer you want to print with in the list "Printer Name".

The driver settings "Media Type", "Print Quality", "Color Mode", "RGB Color Space" and "Page Size" can be selected directly in the print dialog, for other settings use the button "TurboPrint Config".

Note: The GIMP print dialog maintains its own print settings, changes made in TurboPrint Control Center or TurboPrint Monitor are ignored. Always use the button "TurboPrint Config" to change print settings.

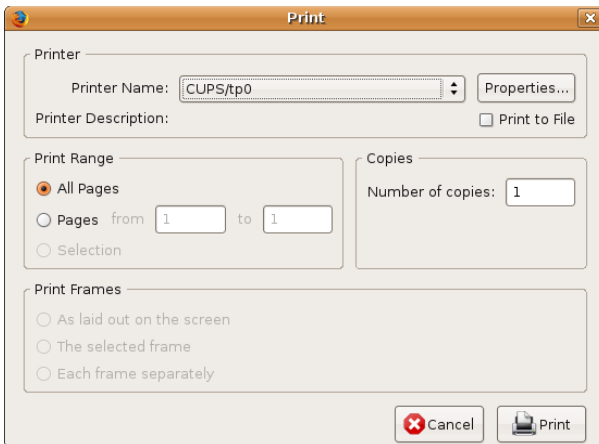
A special feature of the TurboPrint print dialog is the possibility to scale images to more than 100%, so that the a section of the image that fills the whole page is printed.

The button "Borderless Image Size" will set the scaling factor automatically so that the image fills the page completely and no white margins will remain on the printout.

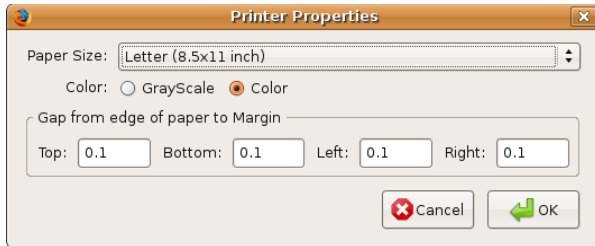
Note: The TurboPrint print dialog for GIMP is a modified version of the original GIMP/Gutenprint dialog (version gutenprint-5.1.6) which was published under GNU General Public License Version 2. The version for TurboPrint is also published under GNU GPL V2, the sourcecode is available on our FTP server <ftp.zedonet.com/gpturboprint>.

13.1.5 Firefox

In the Firefox print dialog choose the TurboPrint printer next to "Printer Name".



In the "Properties" dialog you can choose the paper size and modify page margins:



If headers or footers are cut off on the printout, you should increase the values for top and/or bottom margins.

Firefox doesn't offer any additional print settings. If you need to change settings like print quality, media type etc., you can change the printer default settings in the TurboPrint control center menu instead (see chapter "[8. TurboPrint print settings](#)").

13.1.6 Older programs (e.g. Netscape / Mozilla)

Some application programs print by executing a command line internally: The application creates a temporary file that contains the pages to be printed (usually in "Postscript" file format) and executes the lp or lpr command line program.

With some programs the command line can be edited – the user can specify the print command and the parameters e.g.

```
lp -d tp0
lpr -P tp0
```

(replace "tp0" by the actual name of the print queue).

Instead of lp you can also enter the KDE command

```
kprinter
```

or with the Gnome desktop the command

```
gtklp
```

kprinter or gtklp will open a window where you can choose the printer driver and inspect or modify print settings.

Note: You should first make sure that "kprinter" or "gtklp" is installed on your computer. Open a command line ("Terminal") and enter the command

"kprinter" / "gtklp". If an error message like "Command not found" appears, you will have to install the program using the package manager of your Linux system first.

13.2 Printing from command line

From command line (= Terminal, Console or Shell) you can print files using the "lp" command:

```
lp -d <printername> <filename>
```

Depending on the Linux version also the command "lpr" may be used:

```
lpr -P <printername> <filename>
```

Instead of <printername> enter the short name of the printer configuration, as is shown in the TurboPrint control center. The default short name for the first TurboPrint printer is "tp0".

If you want to print a postscript file named "test.ps" to the printer "tp0", enter

```
lp -d tp0 test.ps
```

Another way is to use lp is to put it at the end of a "pipe" - the output of another command is used as input from lp. This is useful if a file is formatted or converted first before it is sent to the printer.

Example:

```
a2ps --output=- textfile.txt | lp -d tp0
```

An ASCII file is converted to a postscript file using the a2ps command. The output is printed by lpr.

For more information on lpr see its man page, which you can view using

```
man lpr
```

Specifying print options

Print options can be added to the „lp“ command

```
lp -d <printername> -o <option>=<value>
```

e.g.

```
lp -d tp0 -o Resolution=600x600dpi <filename>
```

There are standard options that can be used for all printers and printer specific options.

Some standard options are:

landscape print in landscape format (page rotated by 90 degrees)

sides=two-sided-long-edge duplex printing

sides=two-sided-short-edge duplex (pages bound on short edge)

number-up=2 print 2 (4,16) pages on one sheet

Further options can be found on the CUPS HTML online help (see link below).

The following command lists all options that are available for a printer

```
lpoptions -p <printername> -l
```

an.

Formatting ASCII documents

To print ASCII text files in a certain layout, you can call `a2ps` or `enscript` directly. Here are some examples:

```
a2ps --portrait --borders=0 --columns=1 --no-header  
--printer=tp0 myfile.txt
```

```
enscript --portrait --columns=1 --no-header --printer=tp0  
myfile.txt
```

prints just the text - no borders, one column, no headers

```
a2ps --landscape --borders=1 --columns=2 --printer=tp0  
myfile.txt
```

```
enscript --landscape --borders --columns=2 --printer=tp0  
myfile.txt
```

prints the text in landscape orientation with borders, two columns per page with headers (filename, page numbers).

For more information on `a2ps` and `enscript` see the man pages (`man a2ps`, `man enscript`).

Printing Images

Images e.g. in JPG format can be printed directly from command line. Positioning and scaling is done by the CUPS printing system. By default images are rotated if in landscape format and are printed in original size (i.e. the size stored in the image file). If image size exceeds page size several pages are printed.

Image size (in percent of page size) can be specified from command line, e.g.

```
lp -d tp0 -o scaling=50 filename.jpg
```

Further options can be found in the CUPS HTML online help - see link below.

If you want to position images exactly or if you want to print several images on one page you can use the application "LibreOffice Draw" - see also section "[13.1.3 LibreOffice / OpenOffice](#)" in this chapter.

Which file types can be printed?

Many common file types like postscript documents, plain ASCII files or JPG images can be printed directly from command line. If a file format is not supported directly (like some image formats) it must be converted first.

Responsible for correctly discerning the file type is the CUPS printing system - see HTML online help in the CUPS web frontend

<http://localhost:631/>

14. Tips and tricks for TurboPrint

In the following chapters you can find information on borderless printing, photo printing and CD / DVD printing.

14.1 Borderless printing

Borderless printing can be activated in TurboPrint Control Center, button "Configure", tab "Layout" by checking the "Borderless" option.

In the print dialog of applications it is different – for borderless printing there are separate page formats that are named "borderless". To enable borderless printing, choose e.g. "A4 borderless" or "4x6 borderless".

Notes:

- The application program's print dialog settings have priority over default settings made in TurboPrint control center, i.e. if the page size can be selected in the application, a borderless size must be chosen there for printing borderless.
- Not all printers support borderless printing
- Only for certain page sizes borderless printing is possible

When printing in borderless mode the document is slightly enlarged in order to let it overlap the page borders a little bit. This ensures that even if the paper is not accurately fed, no white margins will be visible at any border.

The level of enlargement can be adjusted in TurboPrint Control Center with the „overlap“ slider:

- a white margin remains => move the overlap slider to the right
- too much is cut off => move the overlap slider to the left

If there is still a white margin visible at one border even in the „max“ position, you can define a new borderless page size in the „Custom Page Size Editor“ where you can edit printing position and enlargement individually.

Note: Some applications add a white margin around the page, so borderless printing is not effective.

The next section describes programs that are suitable for printing photos in borderless mode.

14.2 Printing photos

For printing photos we recommend the image editor “GIMP” and the drawing program “LibreOffice Draw” - see the chapter [“13.1 Printing from applications”](#) for a description of the print dialogs in these programs. Other programs that can be used are digiKam and eyeofGnome.

Borderless printing

To print photos without margins it is important to set all margins to zero in the application’s page setup dialog.

In LibreOffice select the menu entry “Format” -> “Page...” to open the page setup dialog. Specify the page size (in portrait mode), then choose “portrait” or “landscape” depending on the photo. Finally, set all page margins to zero.

In GIMP, open the TurboPrint print dialog, select a borderless page size (e.g. “4x6 borderless”) and press the button “Borderless Image Size” to fit the photo on the page without any white margins.

Print settings

When printing photos make sure that the following print settings are correct:

Page size – select the size of the photo paper. For borderless printing, select a “borderless” size like “4x6 borderless”

Media type – select the type of paper used, e.g. matte inkjet paper or glossy photo paper. If your photo paper is not listed, choose a similar paper. For best quality, we recommend to create a new color profile using our profiling service (see [“10.3 Creating individual color profiles”](#)).

Print quality – for printing photos, a high print quality is recommended. If the printout has visible grain or banding even in the highest print quality mode, you should check if the print head is working properly by printing a “Nozzle test page” from TurboPrint control center, function “Toolbox” (see chapter [“7.3 Nozzle Check”](#)).

14.3 CD / DVD printing

TurboPrint supports printing on CD / DVD printable media for most printers that offer this functionality. We recommend the application “LibreOffice Draw” to create the CD / DVD layout – or the image editor “GIMP” if you want to print a photo on a CD / DVD.

Setting up the page layout for CD / DVD printing

Open the page layout dialog (“Format” → “Page...”) and enter 14cm as page width and height, then set all page margins to 1cm (left / right / top / bottom) so that a printable area of 12x12cm remains.

If you are printing from GIMP, simply choose the page size “CD / DVD”.

Making test prints to determine the correct print position

We recommend to print crosslines onto an old CD. Thus you can determine if any adjustments to the print position or the inner / outer margins are necessary.

Adjusting the CD layout in TurboPrint's pagesize editor

You can adjust the inner and outer margins and the print position for CD / DVD printing in TurboPrint Control Center, button “Sizes” – see chapter [“9. Custom page size editor”](#).

Design a CD label with LibreOffice Draw

Now you can design your CD, e.g. add an image (“Insert” -> “Picture” -> “From file...”) or text (Toolbar -> Text Tool). The center hole and the outer margin will automatically be “masked out” when printing.

Print settings

Make sure that the following print settings are correct in the LibreOffice print dialog:

Page size – choose “CD / DVD”

Media type – from the print dialog, open “Properties” -> “Device” and set “Media Type” to “CD printable”

Print quality – a high print quality is recommended. If the printout has visible grain or banding even in the highest print quality mode, you should check if the print head is working properly by printing a “Nozzle test page” from TurboPrint control center, function “Toolbox” (see chapter [“7.3 Nozzle Check”](#)).

15. Problems and solutions

In the following chapters you can find solutions for common installation and usage problems.

Additional “frequently asked questions” and solutions can be found in our TurboPrint support forum: www.turboprint.info/support.

15.1 Installation problems

15.1.1 Package installation problems / setup problems

Possible reasons for installation problems are:

- You are trying to install the 64bit download version of TurboPrint on a 32bit Linux installation. Even if the computer has a 64bit CPU, it is possible to use a 32bit Linux installation that accepts only 32bit applications.
- The wrong package version was used. There are three TurboPrint download packages:
 - **.deb** for Ubuntu and other Debian package compatible Linux distributions
 - **.rpm** for Fedora, SuSE and other RedHat package manager compatible Linux distributions
 - **.tgz** for all Linux distributions (installation from command line)
- Missing system libraries – see the following sections for troubleshooting

Installation of .tgz archive

After extracting the archive, start the installation from a terminal window using the command

```
./setup
```

or

```
sudo ./setup
```

(see chapter “[4.1.2 Installation of TGZ archive](#)”). An installation problem is often indicated by an error message, for example

```
setup: error while loading shared libraries: libgtk-2.0...
```

which means that the system library “libgtk-2.0” is missing. On Ubuntu/Debian

systems this library can be added with the command

```
sudo apt-get install libgtk2.0-bin
```

If you cannot solve the problem, you can submit a trouble report (see chapter "[15.4 Submitting a trouble report](#)").

DEB package installation

If package installation fails, check the installation output for error messages on the command line. When using a GUI package manager like gdebi, click on "terminal" to see the installation messages.

The error message(s) should explain the problem, for example

```
Dependency is not satisfiable: libgtk2.0-bin
```

means that the system library "libgtk-2.0" is missing. On Ubuntu/Debian systems the library can be added with the command

```
sudo apt-get install libgtk2.0-bin
```

If you cannot solve the problem, you can submit a trouble report (see chapter "[15.4 Submitting a trouble report](#)").

RPM package installation

We recommend to try installation from command line to get a detailed error message. Make sure that the TurboPrint .rpm download package is present in the home directory "/home/<username>". Then open a "Terminal" window.

Enter the command "ls" (list files) to make sure that the file "turboprint-2.xx-x.i586.rpm" is present in the current directory ("xx-x" and "i586" indicate the TurboPrint version and processor architecture). Then enter the command

```
sudo rpm --install turboprint-2.xx-x.i586.rpm
```

(replace "xx-x" and "i586" as in the actual package name). Your admin password will be requested.

The error message(s) should explain the problem, for example

```
error: Failed dependencies: libgtk-2.0... is needed by
  turboprint-2.xx-x.i586
```

means that the system library "libgtk-2.0" is missing. Use the package manager of your Linux installation to add the missing system components.

If you cannot solve the problem, you can send us a trouble report (see chapter "[15.4 Submitting a trouble report](#)").

15.1.2 Printer port not found during printer installation

When adding a USB printer in TurboPrint Control Center, your printer should be shown in the list of printer ports (e.g.: "Canon PIXMA iP4500 TP-USB #1").

If you cannot find your printer in the list, make sure that your printer is connected and powered on.

On some Linux installations it is necessary to start the TurboPrint control center as administrator ("root" user). Open a terminal windows and enter

```
sudo turboprint
```

Then try to add your printer again.

15.2 Printing problems

If printing from an application program fails, you should first print a test page from TurboPrint Toolbox. You can open the Toolbox either from TurboPrint Control Center or from TurboPrint Monitor.

If the problem occurs only when printing from certain applications, please read the chapter "[15.3 Problems with certain applications](#)" before sending us a trouble report (chapter "[15.4 Submitting a trouble report](#)").

15.2.1 Network printing problems

When having problems printing via a printer server or print server box, try to use a different network printing protocol: "**LPD**" instead of "**Socket / Jetdirect**" or vice versa. Most network printers and printer servers support several protocols, often also the **IPP** protocol is supported.

The network protocol can be selected in TurboPrint Control Center, dialog "Edit".

Also check whether the server's IP address can be reached: open a terminal window and enter the command "ping <server name or ip address>", e.g.

```
ping 192.168.17.33
```

After a few seconds abort ping by holding the "Ctrl" key and pressing "C".

Ping will either report "0% packet loss" if the connection was successful or "100% packet loss" if the print server could not be reached. In this case check your network settings – your server's IP address may have to be adjusted to the address range of your local network.

15.2.2 TurboPrint Monitor doesn't show printer / ink status

For technical reasons, the printer status is not available if the printer is connected via a network print server (except Linux servers where TurboPrint is installed on the server). Furthermore not all printers support ink status display.

A pre-condition for successful status and ink display is that TurboPrint daemon is running (see chapter [“4.1.2 Installation of TGZ archive”](#)). You can activate TurboPrint daemon in the TurboPrint Control Center, dialog “Preferences”, setting “Start TurboPrint daemon when booting”. The daemon will be activated during the next reboot.

If printer status and ink status are normally visible but **not during a printout**, the wrong USB printer “backend” may be active. Open TurboPrint Control Center and check if the entry in column “URI” starts with “tpu://”. Otherwise open the “Edit” dialog and select the port entry that ends on “TP-USB” .

15.2.3 Bad print quality / color quality

For optimum print quality and good color reproduction, it is important that the print settings are correct.

Default settings can be chosen in TurboPrint control center, dialog “Configure”. Most applications allow the user to modify these settings in the application print dialog, so also check if the settings in the application print dialog are correct.

The following settings are most important:

Index card “Main”:

- Paper / Media Type
- Print Quality

Index card “Color”:

- Intent (in most cases “Perception” is the correct choice)
- Color Mode (“Color RGB”)
- Color Space (should be identical to the document color space selected in the application program). If colors are printed too dark, you should change from “sRGB” to “Apple RGB” color space.

Also check if the correct printer driver has been set up and if the printer is working properly:

- The driver must match the printer model, e.g. don't choose "Canon BJC4000" for a "Canon iP4000" printer.
- Check ink cartridges and print heads using TurboPrint Toolbox, function "Nozzle Check". All colors must be present, no lines in the test patterns should be missing. If there are problems, try "Clean Print Heads".
- Do you use original manufacturer's cartridges or compatible ink cartridges? With compatible cartridges colors may not be printed correctly. For best quality, we recommend to create a new color profile using our profiling service (see "[10.3 Creating individual color profiles](#)").

15.3 Problems with certain applications

Some problems are not caused by the printer driver but by the application software and / or Linux operating system components. If fonts are not printed correctly, there is a problem with the application and/or the Linux postscript interpreter "Ghostscript". Sometimes no printout at all is possible if the application doesn't send correct print commands.

To detect such problems already before printing we recommend to enable the option "Preview Jobs" in TurboPrint Monitor (see chapter "[11. TurboPrint Printer Monitor](#)"). Before printing starts a preview of the page to be printed will be displayed (you can enlarge the preview by increasing the window size). If the preview is incorrect there is already a problem that is caused by the application program and / or the Linux postscript interpreter.

If the preview is correct but the printout isn't, send us a trouble report (see chapter "[15.4 Submitting a trouble report](#)").

15.3.1 Borderless printout not possible

Please read the hints on borderless printing in chapter "[14.1 Borderless printing](#)".

15.3.2 Problems when printing to CD/DVD

Please read the hints on CD/DVD printing in chapter "[14.3 CD / DVD printing](#)".

15.3.3 PDF document is not printed properly

If you have problems when printing a PDF document, try printing from a different PDF viewer. In most cases a reliable printout is possible using the “Adobe Reader” application. You can download this application from the manufacturer's web site:

http://www.adobe.com/de/products/acrobat/readstep2_allversions.html

15.4 Submitting a trouble report

Before sending a trouble report, please visit our TurboPrint support forum at www.turboprint.info/support where you can find frequently asked questions and problem solutions.

To submit a trouble report, fill in the form “BUGREPORT” which is contained in the TurboPrint installation archive and send it by email to bug @ turboprint.de.

Also include the log files

```
/var/log/turboprint/print.log  
/var/log/cups_error/log
```

For short notes & comments you can also use the TurboPrint feedback form: www.turboprint.info/feedback.html .