Documentation for HPTools

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Contents

1 What is HPtools

HPTools is written to make it simple sending ESC-sequences to the printer. ESC-sequences are printer commands to print in landscape format, small, big and so on. With the help of HPTools these commands are changed into easy to note expressions. The most important reason to use HPTools in LINUX is the fact, that HP printers need a linefeed at the end of every line. This linefeed is unknown in the original ASCII code with Linux. So it will happen, that the printer puts the whole document into one line. There is one printer command solving this problem. It looks like *&k2G* . With HPTools it changes to *cr* . All the other commands you can use with HPTools are described in this document. The program was written for the HP560C but it should work with all HP printers, and with a lot of others. It was succesfully used on an *OKI Laserline 6 elite* .

2 Rights

There is no warranty for the function and correctness of this software package. The use is on your own risk, so I will not pay for any damages arised by this package. The package is free of charge, and you are allowed to copy it, but only in the original condition.

3 Compiling and Installing

To use HPTools you first have to compile it. For doing this you will need an ANSI C - or C++ compiler. Using LINUX you are doing good to use the GNU-C mostly distributed with the LINUX package. First you should edit the *Makefile* of this package. The needed changes are according to the printer device and the path you want install into. The printer devices are found in the */dev* directory. The mostly used is */dev/lp0*, which is the same like LPT1 in MSDOS. But which one you have to use depends on your local machine. A look into your */etc/printcap* should help. Following line is located in the *Makefile*

DEVICE= '“/dev/lp0“'

Here you have to overwrite */dev/lp0* with the device you have to use. It's also possible to put an filename instead the device into it. The so specified device or file is used as default. But it is possible to set another output with the options described in 5. Then all commands will be redirected into this file. You have to put the path you want install HPTools, into the line containing

HPPATH= /usr/bin

and the path of your manpages into the line

MANPATH = /usr/man

Now we can start compiling. Type

make all

in the directory containing *Makefile* and *hp.c*. If you succeed, you first should test the executable in the local directory. Only type *hpset* which should resolve in a list of available commands. If everything works fine type

make install

After this procedure you will find the executable in the directory you defined. You will find the descriptions of the commands in section 6. If you have problems compiling or installing HPTools send a note with an error description to the address given in section 11. The compilation on other systems is not tested yet, but HPTools should compile on every ANSI-C compiler successfully, but you have to change the system specific parts. One of them is the device of the printer. If anyone managed it to compile HPTools on another system, I would like to get a copy of the *Makefile* and the changes, to put it into the next version of HPTools.

4 Usage

The usage of HPTools is simple. Just type the name of the executable, normally *hpset*, followed by the printer commands described later.

hpset [options] [Command1] [Command2] ...

Notice that some commands need to be typed in a given order to work. This is described in section 6. On the first usage it is useful to check the function of the program. This is done by typing *hpset test*. This should start the printers self test.

5 Options

-h	Prints a help message.
-c	Writes the output into *stdout* which is similar to *-o stdout*
-o [file or device]	Writes the output into the specified file or device.

6 Commands

6.1 Printer Steering

back	Puts every setting back to the printer defaults.
test	Starts the self test. Note, that this is the self test of the printer.
out	If paper is inside the printer, it will be thrown out.
cr	After this command the linefeed is activated. So the printer is putting back the printerhead to the begining of the paper after every line. This is needed on LINUX, because of the standard ASCII which do not know MSDOS formating characters.
lbon	This command is activating the linebreak, to break too long lines.
leftright	Forces the printer to print only from left to right.
rightleft	Forces the printer to print only from right to left.
bidirect	Forces the printer to print from left to right and from right to left.
execoff	Every following command is not executed, but printed.
execon	Every following command is executed.
nice	Enables high quality printing.
econo	Enables fast and economic printing. (Of course low quality).

6.2 Page Steering

landscape	Prints in landscape format
portrait	Prints in portrait format
lpi#	Sets the lines per inch. For # type 6 or 8

6.3 Types

The following commands must be sent in the given order. If you don't notice this, the printer may result in trash. The sequence has to look like:

hpset [characterset] [characterdistance] [character density] [point size] [type position] [line strength] [type]

Characterset	english	ISO 4
	ansi	ANSI ASCII ISO 6
	sweden	ISO 10
	italian	ISO 15
	spain	ISO 17
	german	ISO 21
	france	ISO 69
Characterdistance	prop	Proportional
	fix	Fixed

If you've choosen proportional you dont have to set the character density.

Character density	cpi#	# is one of 5,6,10,12,16,16.67,20,24
Point size	point#	# is one of 4.75,5,6,7,8,9.5,10,12,14,19,24
Type position	italic	Italic
	upright	Normal
Line strength	bold	Bold
	normal	Normal
Type	courier	Courier
	times	CG Times
	gothic	Letter Gothic
	univers	Univers

Notice that not every combination of the commands above is possible. The following table gives an overview of the ones allowed.[1]

Type	Direction	Character Density	Point Size	Position	Point Strength
courier	portrait	5,10,16.67,20	6,12	upright	normal bold
courier	portrait	5,10,20	6,12	italic	normal bold
courier	landscape	10,16.67,10	6,12,24	upright	normal bold
times	portrait	prop	5,6,7,8 10,12,14	upright italic	normal bold
gothic	portrait	6,12,24	6,12	upright italic	normal bold
gothic	landscape	12,24	6,12,24	upright	normal bold
gothic	landscape	16.67	4.75,9.5,19	upright	normal bold
univers	portrait	prop	5,6,7,8 10,12,14	upright	normal bold
univers	portrait	prop	5,6,10,12	italic	normal bold

7 Using special printers

If you plan to use *hpset* with a remote printer for example, you have to redirect the output to the *stdout*. Now you can use a *pipe* to redirect this into a printer-manager like *lpr*. For example you want to send commands to a remote printer called *rhp*. Then you have to use following command:

hpset -c [commands] |lpr -Prhp -l

or

hpset -o stdout [commands] |lpr -Prhp -l

[1] From the german manual of the HP560C

8 Usage with filters in printcap

By using *lpr* you might want to use other fonts or special settings. To get this permanently you can define a filter in printcap. The entry you need is *if=/etc/text-filter* where */etc/text-filter* is a script with the printer commands. But first an example of the configuration for a printer with filter in *printcap* :

lp:lp=/dev/lp1:sd=/usr/spool/lp1:if=/etc/text-filter:sh

More information about the entries in *printcap* can be found in the manual page of *printcap* .[2] The *text-file* script could look as follows:

```
#! /bin/bash
hpset -o stdout out back cr lbon portrait
zcat -f
hpset -o stdout out
```

To mind is that you have to force *hpset* to write into the *stdout* . This is done by the *-o stdout* or *-c* option. Using *zcat* instead of *cat* make it possible to print zipped files.

9 Using the prompt function

If you execute *hpset* without any commands, the cursor will jump into the next line and will wait for input. It is also allowed to give some options but no commands to get in this mode.
Now you can type in all available commands. A typical command sequence should be:

```
bytekiller: $ hpset
hpset>execoff
sending execoff command to /dev/lp1
hpset>landscape
sending landscape command to /dev/lp1
hpset>execon
sending execon command to /dev/lp1
hpset>out
sending out command to /dev/lp1
hpset>quit
bytekiller: $
```

This will print the ESC sequence of the *landscape* command and throw out the paper. The *quit* or *exit* command leaves the prompt. The help message is shown by typing *help* .

[2] called by *man printcap*

10 Next Versions

In the next versions I will try to get the printer command set out of the program, into a configuration file. So it should be possible to use the program with other printers only by changing the config-file. Also printer extension cards will be easy to handle. If this happens I will change the name of HPTools, because it is not longer bound on the HP printers. Which name I will use is not decided yet, but there will be a last HPTools version with the information you need to get the new one.

11 Errors

If there are any errors in the program or in the documentation, I would be happy getting an error report. If you're not able to send email you also can use snail mail.

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