



HOW TO INSTALL PAGE PRINTER DRIVER ON LINUX

**Instructions for Postscript printer
and Non-Postscript printer**

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Summary

Introduction to LINUX Printing system

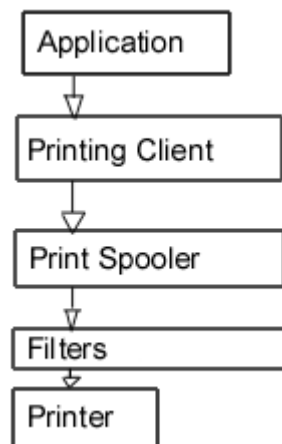
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Introduction to Linux Printing System

We will give a short overview of LINUX printing system and explain basic things on printing on LINUX without going into details.

When printing a file on LINUX it will go through several steps before coming to the printer. Generally, the printing request comes from Application layer before passing through Printing Client, Spooler and different filters.



To print a file from Application layer generally we are using text files that you can print without any problem on any printer. However, if you want to print graphics generally a Postscript printer is used to perform this operation.

Not all printers are Postscript enabled. Therefore, an emulator – Ghostscript – is used to convert Postscript files to the printer specific formats.



Every file on LINUX is transformed to Postscript file which will do all conversion work before sending the print job to the printer. For sending printer job, you have to use a client program. It can be lpr or lp which are responsible of sending the print job to the printer.

I) POSTSCRIPT PRINTER

1) Conditions

You must have a Postscript printer in order to print from Linux.
Printing System functioning and installed with all necessary packages.
If using KDE – it's advised to use KDE3 because all example here bellow are using KDE3.

2) Which Linux version?

You can use any Linux version/distribution that includes Ghostscript software.
If not, you will have to install it on your Operating system in order to be able to print.
If you're using CUPD software than you will have to have CUPS packages installed on your system.
Ghostscript is used to send postscript files on the printer.

3) CUPS – Common Unix Printing System or something else?

It is not mandatory to use CUPS to be able to print on your Postscript printer but it's recommended since it's universal interface and very easy to manipulate.

4) How to install

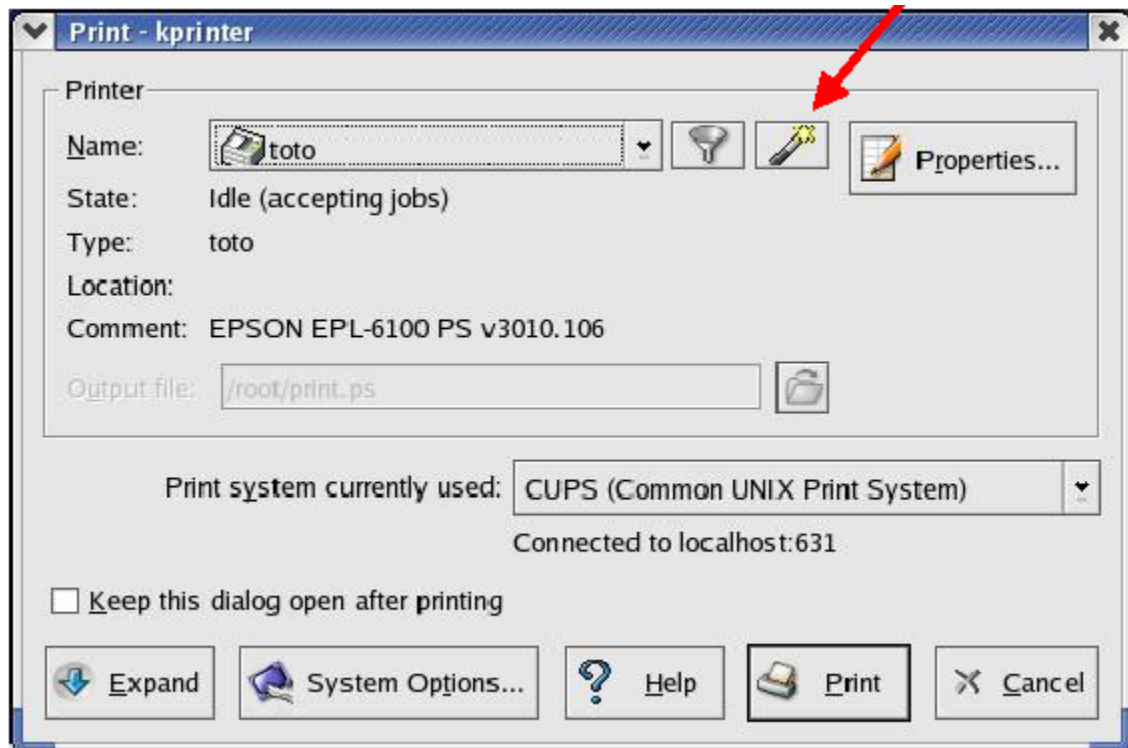
The procedure is very simple.
You just need to choose Postscript generic driver.
To have additional options you will need to use ppd file and to copy it into appropriate directory.

5) Examples

Example 1

OS used: Red Hat 9
with KDE 3

- Launch 'kprinter' from menu



Click on the button to add new printer.

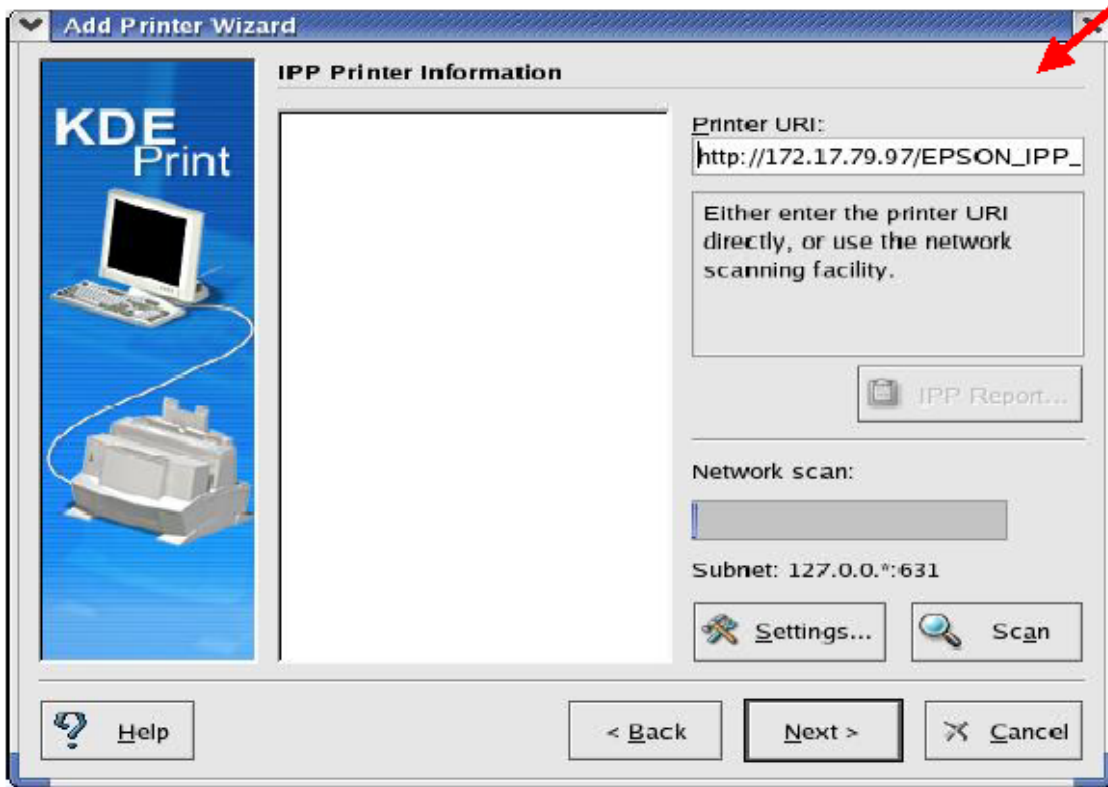
Click **Next**



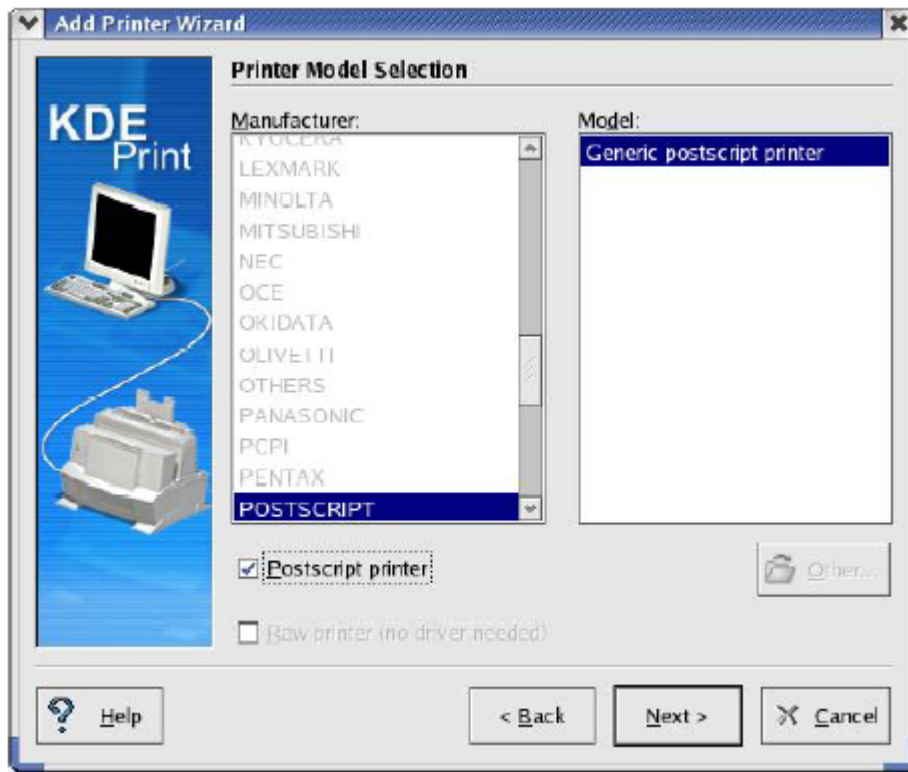
and choose your type of the connection.
For instance: Network printer



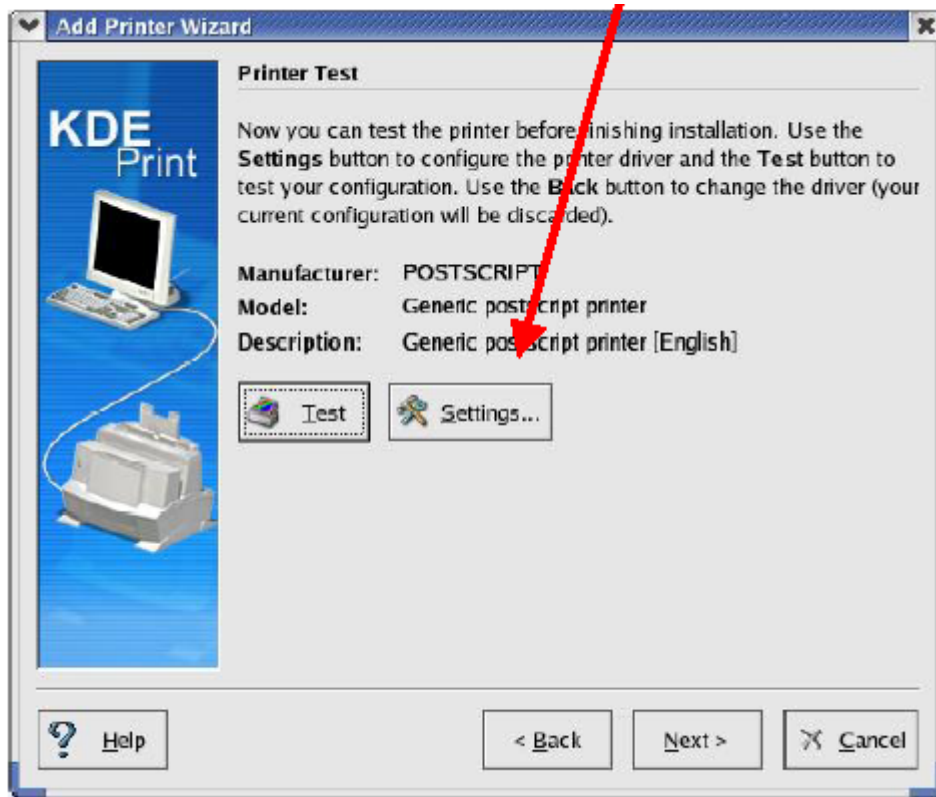
Type in your IP address (followed by EPSON_IPP_Printer in our case)



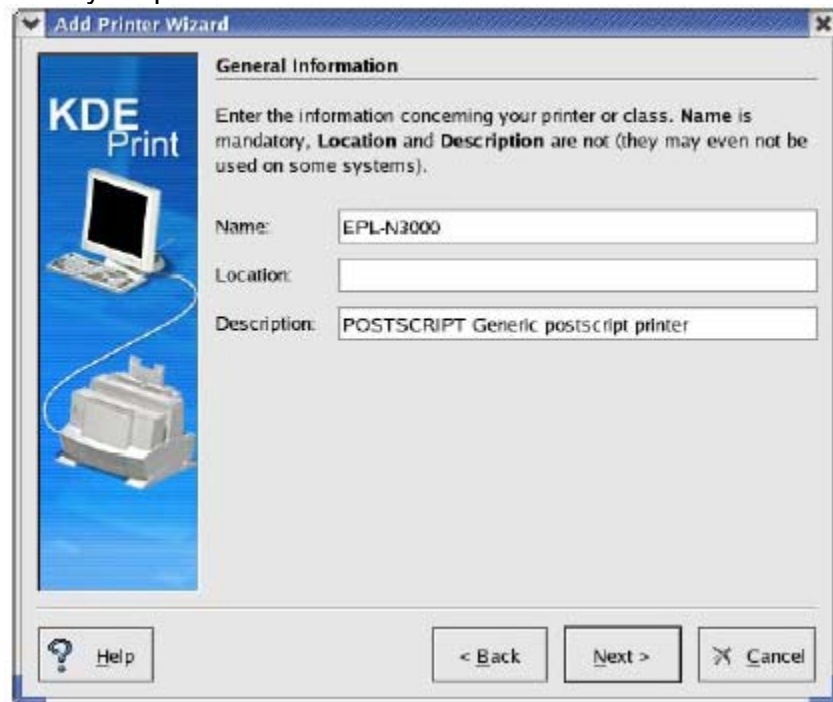
Choose POSTSCRIPT in the 'Printer Model Selection'



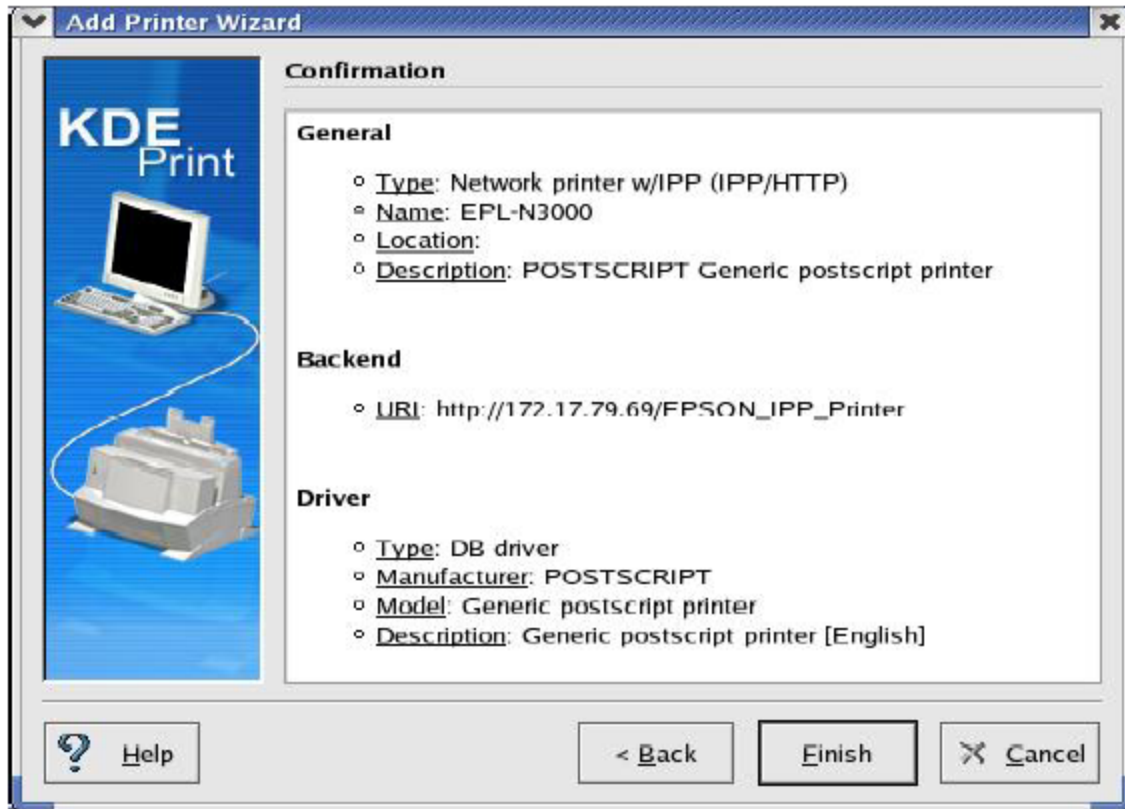
Click Next (you can also change some Settings)



Enter your printer name



And click 'Finish'



Now, you will be able to print Postscript files without any problem.

Example 2

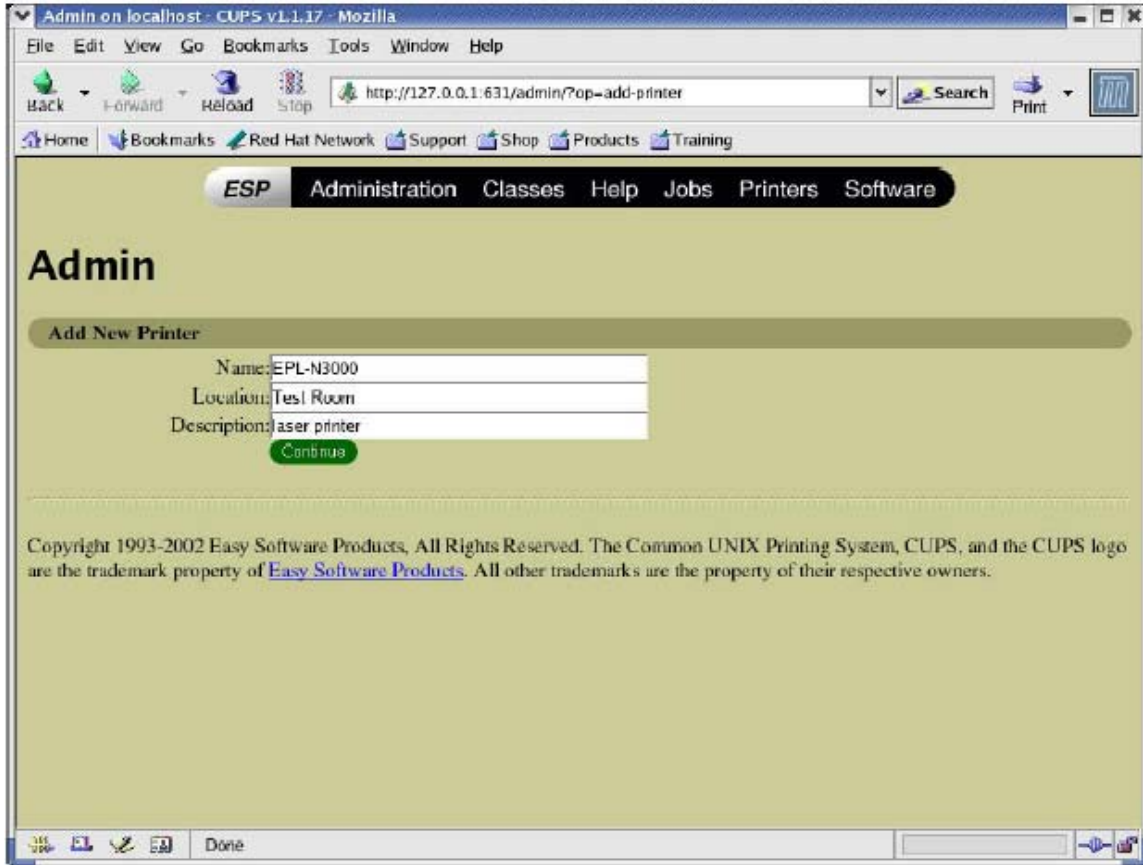
OS : Red Hat 9

With KDE 3

Printing System: CUPS

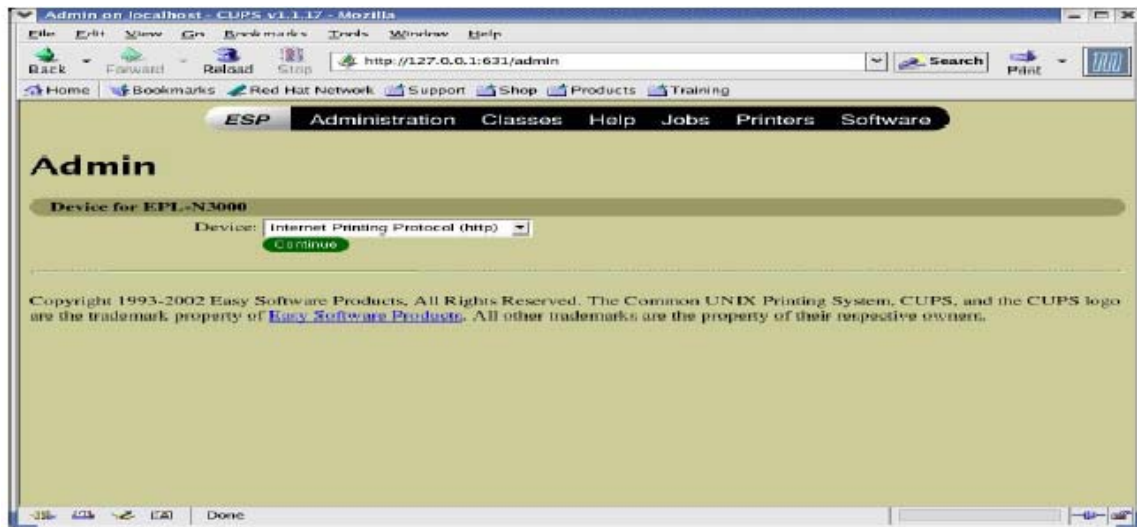
Connect to your localhost: <http://127.0.0.1:631>

And click on 'Add Printer'

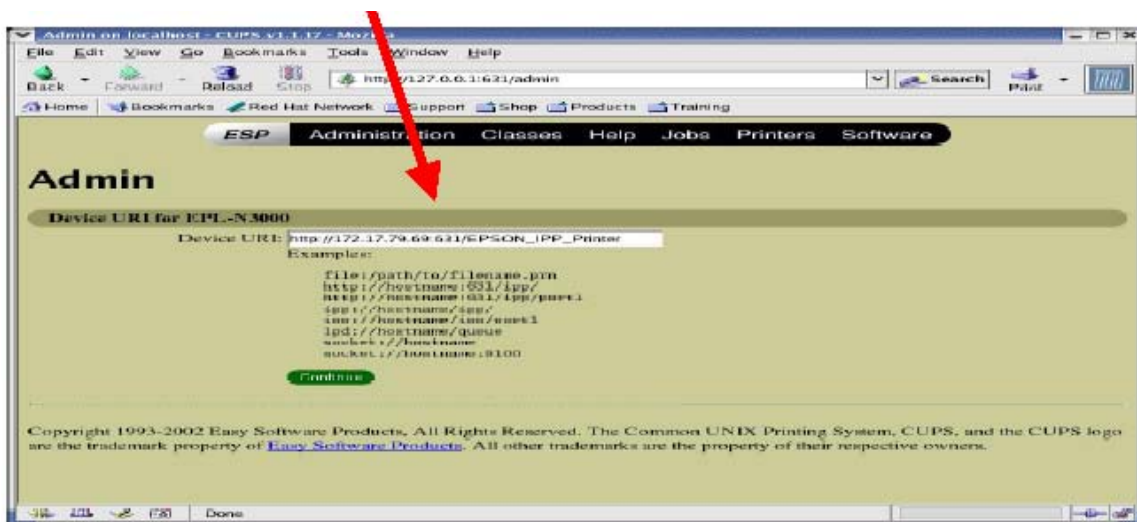


Continue.

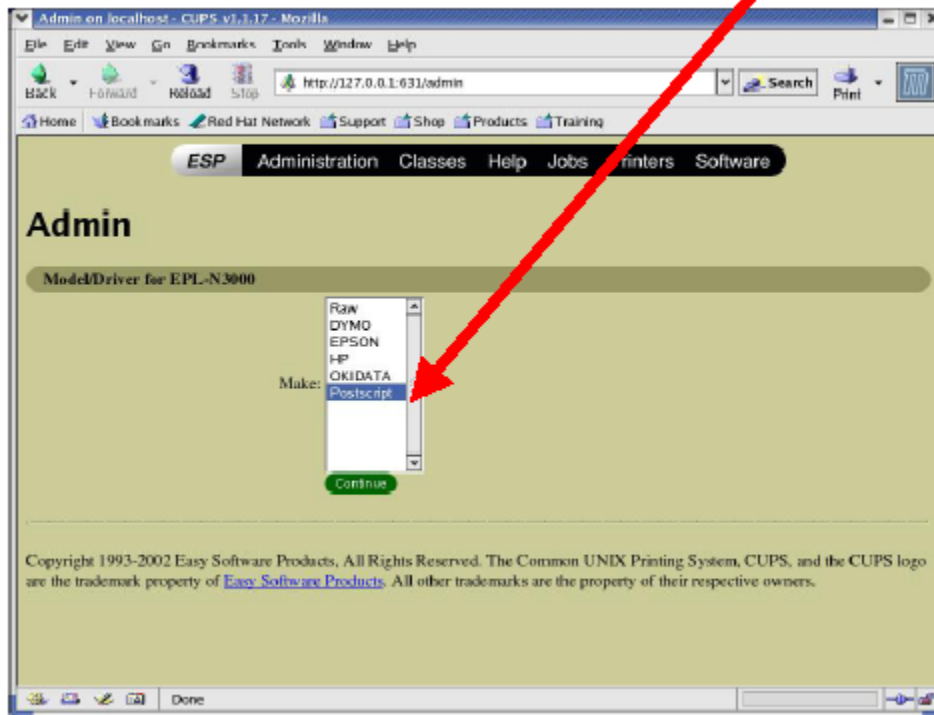
Choose 'Internet Printing Protocol (http)'



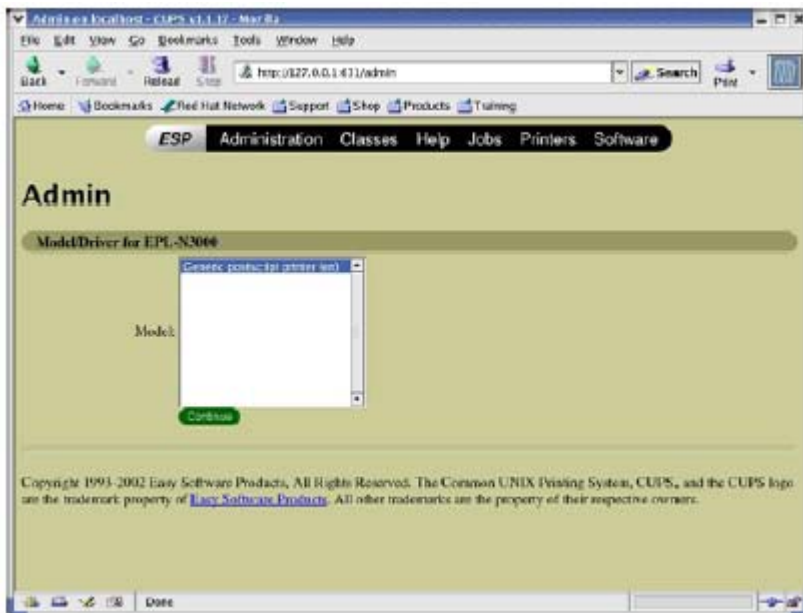
And enter your IP address (ex: http://172.17.79:631/EPSON_IPP_Printer)



Choose Postscript Model



Continue



And that's it.

The printer is Ready.

You can change some setting in Configure Printer.



II) NON POSTSCRIPT PRINTER

1) Conditions

If your printer is Postscript printer then you can see the section II).
Printing System functioning and installed with all necessary packages.

2) Which Linux version?

You can use any Linux version/distribution that includes Ghostscript software.
If not, you will have to install it on your Operating system in order to be able to print.
If you're not using CUPS software than you will have install CUPS packages on your system.
Ghostscript is used to send postscript files on the printer (see www.ghostscript.com for more information and www.cups.org)

3) CUPS – Common Unix Printing System or something else?

LINUX supports many spoolers such as CUPS, LPRng, LPD, GNUlpr, PPR, PDQ.. CUPS became a standard on many LINUX distributions.

4) How to install

In order to install the driver for non-Postscript printer on Linux you have to compile it into Ghostscript.

In order to check if your driver is already included/compiled within ghostscript you can type the command:

```
$ gs -h
```

this will give you the list of all printers compiled within Ghostscript. You will be able to see some generic drivers such as pxlmono, lj4gray..

There are 2 steps in order to install EPSON Printer driver on LINUX:

- Download and install the driver
- Download and install the PPD file

First step : Install the driver

Download the adequate driver for your printer from EPSON Kowa (www.epkowa.co.jp):
At the moment the following printers are supported:

Black and White Laser Printer



EPL-N7000



EPL-6200



EPL-6100



EPL-5900



EPL-5800



EPL-N3000



EPL-N2750



EPL-N2500



EPL-N2120



EPL-2050



EPL-N2050+

Color Laser Printer



AcuLaser C8600



AcuLaser C8500



AcuLaser C4100

EPSON EUROPE ENGINEERING 3rd Level SW Support



AcuLaser C4000



AcuLaser C2000



AcuLaser C1900



AcuLaser C900

4.1) Install non EPSON printer driver

It is not necessary to install original EPSON printer driver for your printer since some generic drivers may work with your printer.

In that case the procedure is the following:

Go to www.linuxprinting.org and select your print or simply click on the link of the printer you need driver for:

Make	Perfectly 🐧🐧🐧	Mostly 🐧🐧	Partially 🐧	Paperweight 🚫
Epson	ActionLaser 1100* ActionLaser II* ActionPrinter 3250* AcuLaser C1900 AcuLaser C1900PS AcuLaser C2000 AcuLaser C2000PS AcuLaser C4000 AcuLaser C4000PS AcuLaser C8500 AcuLaser C8500PS AcuLaser C8600 AcuLaser C8600PS CL 700 CL 750 Dot Matrix EM 900C EM 900CN EM 930C EM 930CN EPL-5200* EPL-5200+* EPL-5800 EPL-5800PS EPL-5900 EPL-5900L EPL-5900PS EPL-6100 EPL-6100PS EPL-7100 EPL-N1600 EPL-N1600PS EPL-N2050 EPL-N2050+	CL 760 EPL-5700 EPL-5700L EPL-5800L EPL-6100L EPL-6200L	MC 2000 MC 9000 MC 10000 PM 950C PM 970C PM 9000C PM 10000 PX 7000 PX 9000 Stylus Photo 2000P Stylus Photo RX500 Stylus Pro 7600 Stylus Pro 9000 Stylus Pro 9500 Stylus Pro 9600 Stylus Pro 10000	AcuLaser C900 AcuLaser C1000 EPL-5500W*

	EPL-N2050PS EPL-N2050PS+ EPL-N2120 EPL-N2750 EPL-N2750PS			
--	--	--	--	--

You will see what is '**Recommended**' driver for your printer as well as the list of alternative drivers for your printer.
Some alternative drivers are already included in Ghostscript (see 'gs -h') and you will just need to download 'PPD' file for your printer.

Example:

You need to install the driver for AcuLaser 8500.
Click on the link from the previous table:

http://www.linuxprinting.org/show_printer.cgi?recnum=Epson-AcuLaser_C8500

You will have one 'Recommended' driver – **alc8500** and some other generic drivers.

If you want to use generic driver then, you need to download PPD file corresponding to generic driver you want to use.

For instance, if you want to use **lj5gray** driver you have to download the PPD file associated to:

http://www.linuxprinting.org/ppd-o-matic.cgi?driver=lj5gray&printer=Epson-AcuLaser_C8500&show=0

And put it to /usr/share/cups/model (this directory can change – it depends of your Linux version).

Then, re-start cups : /etc/init.d/cups restart

Now, you should have your driver installed and printer ready for printing.

4.2) Install EPSON printer driver

This procedure applies for EPSON printer drivers downloaded from EPSON Kowa.

1) Installing with rpm file

First, download from www.epkowa.co.jp the corresponding driver for your printer and follow the instruction hereafter:

There are 3 ways to install EPSON printer driver:

- by patching Ghostscript with RPM package
- by installing a pre-compiled ghostscript
- by re-compiling Ghostscript

Please note that the following rpm package is version 4 RPM.
Version 4 RPM package cannot be installed in RedHat6.2.

Execute the rpm command to complete the installation.

```
-----  
# rpm -ivh ghostscript-7.05-32.1ep3.1.3.i386.rpm  
-----
```

Execute the following command if any dependent errors occur.

```
-----  
# rpm -ivh --replacefiles ghostscript-7.05-32.1ep3.1.3.i386.rpm  
-----
```

Note)

When conflicts occur during installation, please delete the packages involved that cause the conflicts and proceed on with the installation.

--> Proceed to "4) Setting after installation"

2) Installing with srpm file

This srpm package is version 4 RPM.
Version 4 RPM package cannot be installed in RedHat6.2.

A rpm file is created in the directory /usr/src/redhat/RPMS/i386 when the following command is executed.

```
-----  
# rpm --rebuild ghostscript-7.05-32.1ep3.1.3.src.rpm  
-----
```

Please install with reference to "(1).... Installing a rpm file".

--> Proceed to "(4).... Setting after installation".

3) Installing with a tgz (recompiling Ghostscript) file

Extract the source file and recompile the ghostscript-7.05,ghostscript-6.52 or ghostscript-5.50.

STEP 1

Copy the tgz file to ghostscript source directory.

For gs7.05

```
# cp eplaser-3.1.3-705.tgz /usr/src/redhat/BUILD/ghostscript-7.05/src/
```

For gs6.52

```
# cp eplaser-3.1.3-705.tgz /usr/src/redhat/BUILD/ghostscript-6.52/src/
```

For gs5.50

```
# cp eplaser-3.1.3-705.tgz /usr/src/redhat/BUILD/gs5.50/
```

STEP 2

Change the directory to ghostscript source directory.

For gs7.05

```
# cd /usr/src/redhat/BUILD/ghostscript-7.05/src/
```

For gs6.52

```
# cd /usr/src/redhat/BUILD/ghostscript-6.52/src/
```

For gs5.50

```
# cd /usr/src/redhat/BUILD/gs5.50/
```

STEP 3

Extract the tgz file.

```
# tar xvfz eplaser-3.1.3-705.tgz
```

You will be able to see the eplaser directory, gdevescv.c, gdevesmv.c, and gdevescv.h.

STEP 4

Add gdevescv.mak to contrib.mak. (For color printing)

For gs7.05

```
# cat eplaser-3.1.3/gdevescv7.mak >> contrib.mak
```

For gs6.52

```
# cat eplaser-3.1.3/gdevescv6.mak >> contrib.mak
```

For gs5.50

```
# cat eplaser-3.1.3/gdevescv5.mak >> contrib.mak
```

Add gdevesmv.mak to contrib.mak. (For monochrome printing)

For gs7.05

```
# cat eplaser-3.1.3/gdevesmv7.mak >> contrib.mak
```

For gs6.52

```
# cat eplaser-3.1.3/gdevesmv6.mak >> contrib.mak
```

For gs5.50

```
# cat eplaser-3.1.3/gdevesmv5.mak >> contrib.mak
```

STEP 5

Add alc8500.dev, epl5800.dev and other available devices to Makefile
DEVICE_DEVS.

```
Example: DEVICE_DEVS2=$(DD)alc8500.dev $(DD)epl5800.dev
```

```
-----  
# vi Makefile  
-----
```

STEP 6

Compile the ghostscript and install it.

```
-----  
# make  
# make install  
-----
```

4) Setting after installation

You need to set the command as **/etc/printcap** and create an appropriate filter for ghostscript to use it as lpr filter.

Example (printcap)

```
1  ALC2000:\  
2  :lp=/dev/lp0:\  
3  :sh:\  
4  :if=/usr/local/bin/filterALC2000:\  
5  :sd=/var/spool/lpd/ALC2000:\  
6  :mx#0:
```

- 1:Printer Name
- 2:Specifying the Printer Port
- 3:Controlling the Cover Sheet
- 4:Specifying the input filter
- 5:Specifying the Spool Directory
- 6:Specifying the maximum file size for spooling (Set 0 for unlimited size)

Note) After saving the file, set 'lpc restart all' and restart the lpd.
If it fails, please execute '**/etc/rc.d/init.d/lpd restart**'.

Example (filterALC2000)

```
1  #!/bin/sh
2  /usr/bin/gs -q -dNOPAUSE -dBATC H -sDEVICE=alc2000 -sPAPERSIZE=a4 -
sOutputFile=- -
```

Note) After saving the file, set the command as 'chmod a+x filterALC2000' to give execution authority.

5) How to Operate

Example of outputting to an AL-C2000 using input filtering

```
# lpr -PALC2000 tiger.ps
```

Example of outputting to an AL-C2000 without input filtering

```
# gs -q -dNOPAUSE -dBATC H -sDEVICE=alc2000 -sPAPERSIZE=a4 \
-sOutputFile=- tiger.ps | lpr -Plp1
```

Note) It is assumed that lp1 is configured in /etc/printcap so that it does not use an input filter.

Specify the Device

Specify the following devices from '-sDEVICE' option to use this driver.

```
-AL-C8600 -sDEVICE=alc8600
-AL-C8500 -sDEVICE=alc8500
-AL-C4100 -sDEVICE=alc4100
-AL-C4000 -sDEVICE=alc4000
-AL-C2000 -sDEVICE=alc2000
-AL-C1900 -sDEVICE=alc1900
-EPL-6100 -sDEVICE=ep16100
-EPL-5900 -sDEVICE=ep15900
-EPL-5800 -sDEVICE=ep15800
-EPL-N2750 -sDEVICE=ep12750
-EPL-N2500 -sDEVICE=ep12500
-EPL-N2120 -sDEVICE=ep12120
-EPL-N2050+ -sDEVICE=ep12050p
-EPL-N2050 -sDEVICE=ep12050
```

Printer resolution selection (Default: 600dpi)

Select the printer resolution from '-r' option.

```
-r300 -r300x300 300dpi
-r600 -r600x600 600dpi
-r1200 -r1200x1200 1200dpi
```

Note) 1200dpi is only available to the printer with 1200dpi resolution.

Paper tray selection (Default: Panel setting)
Select '-dManualFeed' manually.

Paper feeder selection (Default: Panel setting)
Select the feeder from '-dCasset' option.

-dCasset=2

Note) Select the feeder (1-15)

If 'Paper tray selection (manually)' is selected, it is invalid.

Output tray selection (Default: Face down)
Select '-dFaceUp' for a face up tray.

Note) it is only available to the printer with face up tray.

Number of copies (Default: 1)

'-dNumCopies' and '-dCollate' specify the number of copy.
(You can choose NumCopies from 1 to 999)

Example)-dNumCopies=3 -dCollate Prints three circulations.

-dNumCopies=3 It will print three circulations.

(Note 1) The circulation print is available for DEVICE=alc2000 and
alc1900, alc4000, alc8600, alc8500, epl2050, epl2050p, epl2750
when the optional HDD or an expansion memory is installed.

-dNumCopies=3 Select -dCollate to print the page as
1,2,3,1,2,3,1,2,3.

When the optional HDD is not installed or a memory is insufficient,
it prints the page as 1,1,1,2,2,2,3,3,3.

(Note 2) The circulation print is available for DEVICE=epl5800 and
epl2120, epl6100, epl5900, epl2750, epl2500
when an expansion memory is installed.

Select -dNumCopies=3 -dCollate to print the page as
1,2,3,1,2,3,1,2,3.

When the memory is insufficient, it prints the page as
1,1,1,2,2,2,3,3,3.

Type of the paper (Default: Plain paper)

Specify the type of the paper from the '-sMediaTypes' option.

-sMediaType=TRANS TRANSPARENCY:OHP

EPSON EUROPE ENGINEERING 3rd Level SW Support

-sMediaType=THICKTHICK:Card board

(Note) When the TRANS or THICK is selected, it will print out the paper from the face up tray even if the output tray is selected.

RIT Control (Default: ON)

Select '-dRITOff' to turn off the RIT control.

Orientation (Default: Panel setting)

Select '-dLandscape' for landscape print.

Toner Save (Default: Panel setting)

Select '-dTonerSaving' for toner save mode.

Double print (Default: Panel setting)

Select '-dDuplex' for double print.

(Note) Double print is available for the printer with a double printing unit.

Binding direction (Default: Panel setting)

Select the double print abd then select '-dTumble' to specify the short edge binding.

Paper Size (Default: A4)

Select the size of the paper from '-sPAPERSIZE'.

-sPAPERSIZE=a3	A3
-sPAPERSIZE=a4	A4
-sPAPERSIZE=a5	A5
-sPAPERSIZE=b4	B4(Japanese)
-sPAPERSIZE=isob4	B4
-sPAPERSIZE=b5	B5(Japanese)
-sPAPERSIZE=isob5	B5
-sPAPERSIZE=c5	C5
-sPAPERSIZE=letter	Letter
-sPAPERSIZE=halfletter	Half letter
-sPAPERSIZE=legal	Legal
-sPAPERSIZE=11x17	Ledger(B)
-sPAPERSIZE=flsa,flse,glg	Government Legal
-sPAPERSIZE=glt	Government Letter

(Note 1) The selected paper size needs to be equipped to the printer and to be defined as gs_statd.ps.

(Note 2) If the paper size can be adjusted from the application, select the same paper size that is used in this driver.

7 Handling Instructions

- (1) When the landscape print is selected from the application, the right edge of the output might be distorted. Please make sure to select portrait print.
- (2) When A4 or LT (letter) size paper is used for an AL-C8500/C8600 feeder tray, set the paper horizontally on the tray.
If the paper is set on the tray vertically, it may affect the printing result.

Second step: Install the PPD file

You can download PPD file for your printer from:

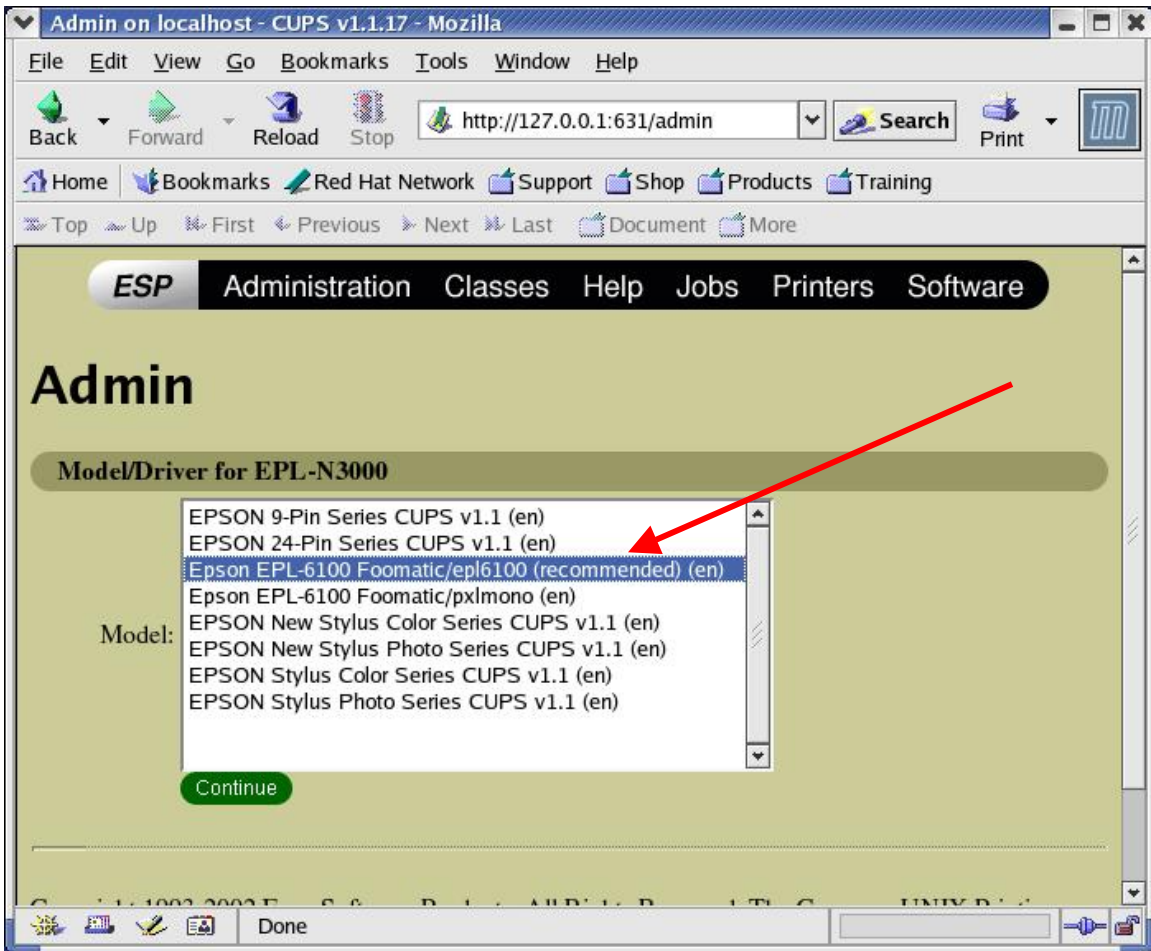
<http://www.linuxprinting.org/download/PPD/Epson>

Then, save your PPD file to '/usr/share/cups/model' and restart cups:

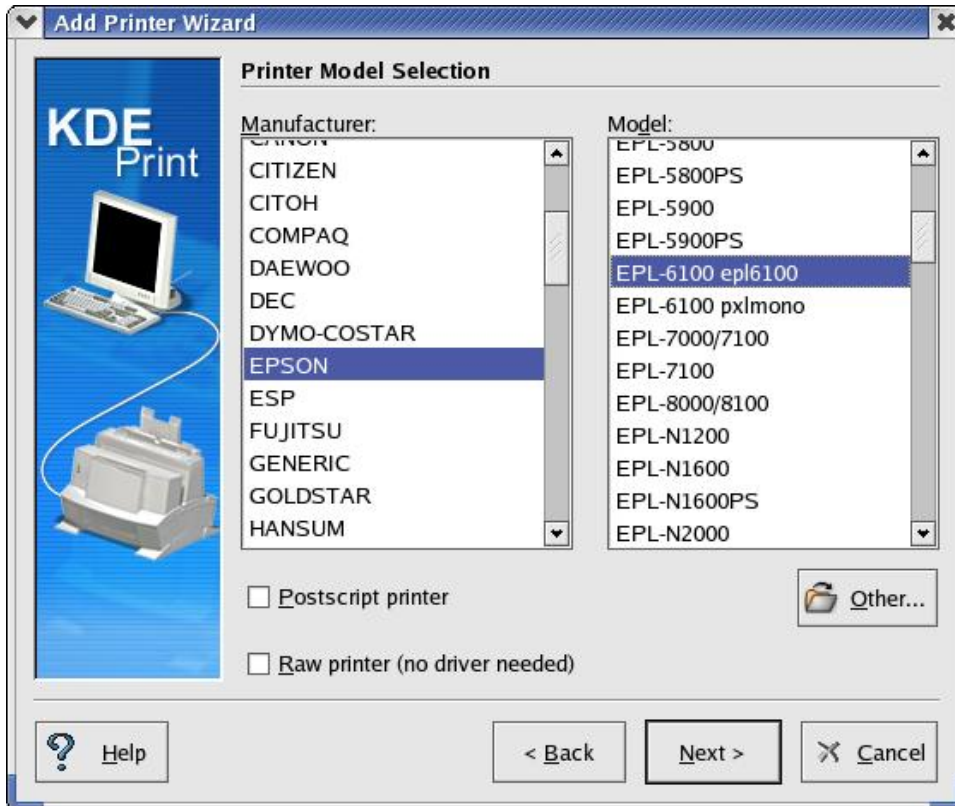
\$ /etc/init.d/cups restart

Then, you can use Cups or directly use printcap as described before to configure your printer.

If using CUPS then, you can use either 'CUPS GUI (Graphical user Interface) :



Or to use kprinter:



Notice also that you can use Epson EPL-6100 Foomatic/pxlmono as alternative driver for this printer.