

# Printing on Linux, simple right?

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# Content

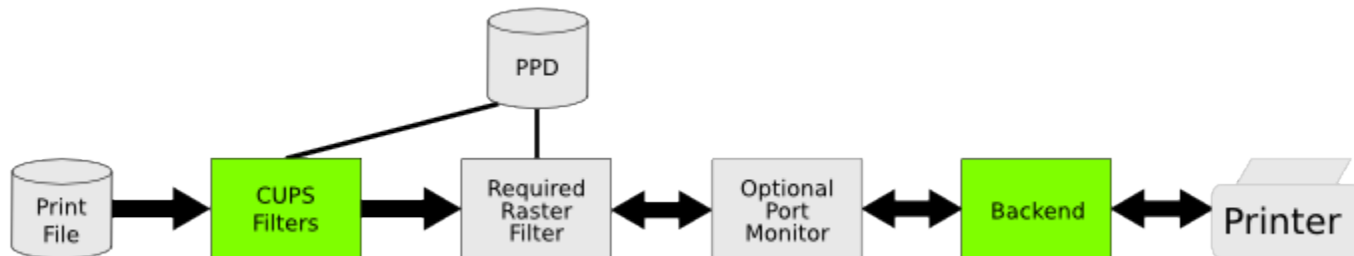
- CUPS - printing solution for 21<sup>st</sup> century
  - and why we *might* need another solutions...
- Specialized printers are different
  - EVOLIS Dualys card printer
  - Zebra S4M label printer
- strategy to develop support for printers
  - print data viewer first to understand protocol
  - converter from standard format to printer protocol
- lpd - older but standard across platforms

# CUPS - Common Unix Printing System

<http://www.cups.org/>

CUPS is the standards-based, open source printing system developed by [Apple Inc.](#) for Mac OS® X and other UNIX®-like operating systems.

- all printers are raster devices!



# EVOLIS Dualys card printer

<http://blog.rot13.org/2010/08/evolis-dualys-pixel-exact-printing-without-cups.html>

- have CUPS driver on vendor site
  - problems with duplex printing
- printer is somewhat complex robot
- pixel-exact barcodes!
- development strategy:
  - simulator to preview file
  - driver to produce printer data
- Inkscape to design card
- GhostScript to rasterize



# RFID integration

Printer has **unsupported** RFID reader on internal USB hub, sigh!



# Zebra S4M label printer

<http://blog.rot13.org/2012/02/printing-from-koha-to-zebra-printers-on-local-windows-machine.html>

- have CUPS driver upstream
- ZPL printer language
  - much more than bitmap printer!
- Windows GDI driver
  - configures printer correctly
- pbm2ZPL.pl driver
- ZPL2pbm.pl viewer
- printers connected via usb to Windows



# lpd - Line Printer Daemon

- supported in CUPS as legacy protocol
- all hardware printer servers supports it
- message queue before it was Web2.0y
- Did you know that lpd can play mp3 files?  
<http://vext01.blogspot.com/2010/11/lpd-music-hack-how-its-done.html>
- Windows lpd server
  - spooling must be enabled!
  - direct to port option with lpd is /dev/null
  - no authentication (printers on Intranet, OK)
- rlpd - print on remote lpd printers

# So, how to print from Internet directly to printer?

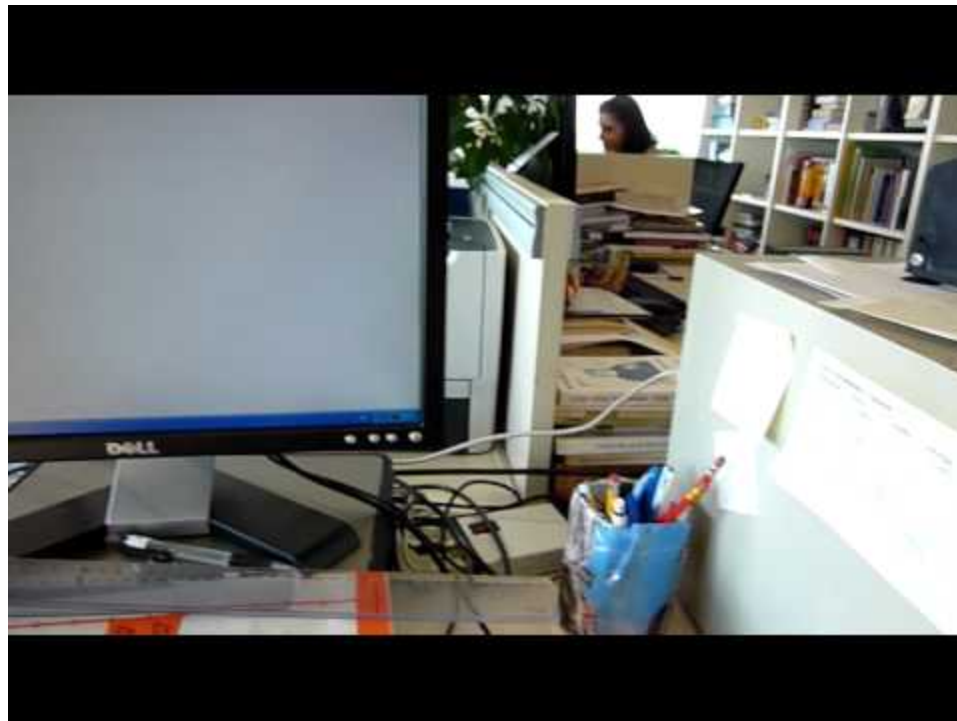
1. Users enter barcode on web page
2. redirect browser to internal URL `http://printer-zebra.intranet/print.cgi?print=12345%20call%20number&return=http://url`
3. `print.cgi`
  - a. `rsvg-convert` creates png from Inkscape template
  - b. `png2ppm | ppm2ZPL | lpr` to client IP address
  - c. check printer status with `rlpq`
  - d. redirect browser to return with added `station=IP`

Website includes png picture of label



# Integration of Koha quick spine label creator and Zebra printer connected to Windows via lpd

Round trip to internal site which generates ZPL is so fast, it's not shown in this video



# Questions?

- Sometimes, it worth re-thinking conventional wisdom about printer deployment
- Writing printer drives is like reverse engineering with documentation ;-)
- More information on my blog  
<http://blog.rot13.org/>