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OpenPrinting

PPD/Classic CUPS driver retro-fit Printer
Application Library

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Introduction



- **PAPPL**-based library to **retro-fit classic CUPS drivers** (PPDs, filters, backends) into Printer Applications: `pappl-retrofit`
- Functionality to
 - Manage **collections of PPD files**
 - Convert between **PPD options** and **IPP attributes**, for `get-printer-attributes` IPP response and for printing
 - Wrap **CUPS filters and backends**, resembling all CUPS functionality incl. side and back channels
 - Convert **standard IPP data formats** (PDF, Apple Raster, PWG Raster) into **printer's format**



PPD file handling

- Everything based on **libppd** of cups-filters 2.x
- **Lists PPDs** with duplicate elimination, user-friendly sorting
- **Auto-assigns PPD** to make/model from device ID, generic PPD to `CMD:` of device ID
- Lists **standard, vendor-specific, and installable accessory** options
- Associates **standard options** with **IPP attributes** and **ready media**
- Auto-selects **best PPD option settings** for `print-color-mode`, `print-quality`, `print-content-optimize` IPP attributes

PPD file handling



- Modifies **Printing Defaults** list depending on **installed accessories**
- Adds **PPD's PostScript code** to PostScript job data streams
- Printers can be **queried for option defaults and installed accessories** if PPD supplies appropriate PostScript code
- Allows user to **add their own PPDs**, checks file format, rejects and warns, prefers user PPDs on auto-assigning to printer, allows removal



Further Properties

- Uses **filter functions** to print **PDF** and **PostScript** input data, to have no inbetween raster step, maintaining maximum print quality
- Uses **PAPPL's raster printing functionality** to print **raster input**, allowing completely **streaming** and "infinite" jobs, conversion to grayscale, and to dithered bi-level (for fast draft printing)
- **A4/Letter auto-selection** by locale environment variables



Next Steps

- We are **nearly feature-complete**, missing parts are due to features added to PAPPL lately (1.2.x):
 - Human-readable strings for vendor options
 - Internationalization/Localization
 - Ink level check, like CUPS does via SNMP in backends
- These features will be added soon, but releasing cups-filters 2.x has priority
- With these features done and cups-filters 2.x released we will **release pappl-retrofit 1.x**



Available Printer Applications

- **4 retro-fitting Printer Applications** to include all free software drivers which are included in Debian
 - **PostScript Printer Application:** ~4000 manufacturer PPDs, user can upload own PPDs
 - **HPLIP Printer Application:** Currently print-only, user can load proprietary plugin via web interface
 - **Gutenprint Printer Application:** Full functionality supported, even for PPDs with > 100 options
 - **Ghostscript Printer Application:** All the rest of the drivers: Built-in, Foomatic, filters, unmaintained, ...
- **Legacy Printer Application** (not as Snap): Maps classically installed drivers into Printer Application

Questions / Comments

