Print Management GUI

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How it works currently

• **Printer setup tools**
  - CUPS command line tools: `lpadmin`, `lpinfo`, `lpstat`
  - `system-config-printer` - GUI
  - GNOME Control Center - Print module - GUI
  - `cups-browsed` - daemon

• Tools **control CUPS**, the running **cupsd**
  - List available printers and drivers and create print queues
  - List queues and jobs
  - Modify queues
  - Server settings: Owner/everyone can cancel jobs, debug mode, ...
Printer management in the New Architecture

• We assume any form of the New Architecture
  ‒ The **CUPS Snap** - OR -
  ‒ **CUPS 3.x** or newer
• **All Printers are driverless IPP printers**, native or Printer Applications
• CUPS auto-creates virtual queue for each IPP printer → No manual queue creation required
• CUPS fully automatic → **Admin action moves to the IPP printers**
• **Tasks**
  ‒ **List IPP services**
    • Buttons to web admin interfaces, IPP System Service, ...
  ‒ **Discover non-driverless printers**
    • Find Printer Applications, local and in Snap Store
• **Similarities** between old and new
  
  **Main Window**
  - Old: List CUPS queues, buttons/pop-up to modify
  - New: List IPP devices, buttons to web IF/IPP System Service

  **Add-Printer Window**
  - Old: List printer devices and drivers, create CUPS queue
  - New: List non-driverless printers, install Printer Application, open Printer Application’s web interface

• **Multi-function devices, scanners, fax out**
  - Functions are all IPP services, list functions of same device together
  - Scanners and faxes are managed like printers
What we already have

• IPP service list manager GUI
  - GSoC 2021: GUI for listing and managing available IPP Print/Scan services (or DNS-SD-advertised network services in general), by Divyasheel
  - GTK+-based, GNOME Control Center module (to replace “Printing”)
  - Discovers services using Avahi
  - Duplicate entries removed, entries sorted by physical (MF) devices
  - Button to open device’s web admin interface

• IPP System Service GUI
  - GSoC 2020: Linux GUI application to admin MF devices using IPP System Service, by Lakshay Bandlish
  - Manage IPP devices talking IPP to them
  - Also GTK+-based, for possible integration in GNOME Control Center
What we still need

• Tool to guide users setting up non-driverless printers (and scanners)
  - “Add Printer” window
  - Detects/discovers all available non-driverless printers (USB, network, ...)
  - **Finds Printer Applications**
    • Already locally installed
    • In the Snap Store
  - **Allows easy setup** of the printer within the Printer Application
    • Fully automatic: IPP System Service, IPP in general, command line?
    • Own GUI (communication as with “Fully Automatic”)
    • Button pointing to Printer Application’s web interface
  • **Note: Printer Applications do not auto-setup on start-up!**
What we still need

• **Putting all the three together** to get the complete thing
  - Lister/Manager + IPP System Service + Add non-driverless printer

• **Complete IPP System Service GUI**
  - Scanners, other services, ...
  - More IPP requests

• **Get into GNOME Control Center upstream**, to replace current “Printing” module by new “Printing & Scanning” module.
  - Ideally, upstream should carry both and on build, install, or run time choose the correct one for the system’s print architecture