



# Printing with Mobile in Mind

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- **Requirements for printing on mobile devices**
  - Lightweight printing stack
  - No big driver/PPD libraries
  - Starting/stopping daemons on-demand
  - No local queues, only network printers
  - No printer setup tool
  - Simple print dialog UI but not dropping essential options



- **Do packaging of cups and cups-filters for three printing stack size levels:**
- **Level 1: Absolute minimum stack ~1 MB**
  - Only printing on remote CUPS queues
  - cups: cupsd, libcups2, ipp backend
  - cups-filters: cups-browsed
- **Level 2: Small stack ~XX MB?**
  - Printing PDF on remote CUPS queues and IPP network printers which do IPP Everywhere, PDF, PostScript, or PCL
  - cups: Level 1 + libcupsimage2, pstops, rastertopwg
  - cups-filters: pdftopdf, pdftoraster, pdftops, rastertopclx
  - Poppler OR Ghostscript (OR MuPDF)
- **Level 3: Desktop stack ~XXX MB?**
  - Printing on any printer which works with Linux
  - Full upstream packages and all drivers and PPDs



# Starting and Stopping Daemons on Demand

- **CUPS**

- xinetd on request on port 631 (no socket support)
- systemd? Upstart?
- Add feature to CUPS daemon to auto-stop after on-demand start (“cupsd –stop-on-idle-sec 30”?)

- **cups-browsed**

- Trigger by avahi-daemon
- Close after having handled the triggering event
- Works for Bonjour browsing only, CUPS broadcasting/browsing not needed



# No local queues, only network printers

## No printer setup tool

- **cups-browsed browses for IPP printers**

- Remote CUPS queues
- IPP network printers
  - IPP allows polling capability info
  - IPP Everywhere (PWG Raster)
  - PDF
  - PostScript
  - PCL
  - Generate PPDs let PPDs generic where detailed capability info is missing
- Create local queue when printer appears, remove when printer disappears



- **Provide a print dialog as system part, for all apps**
- **Keep it simple (like iOS dialog) ...**
- **... but do not drop essential options**
- **Important options:**
  - Page Size (esp. for photo printing)
  - Paper type or tray
  - Duplex
  - Quality
  - Number of Copies
  - ???



# Questions?