# cups-filters
## The non-Apple part of CUPS, maintained by OpenPrinting

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- **From version 1.6.x on CUPS dropped features not needed for Mac OS X**

  ➢ Filters for file conversion and Postscript workflow: imagetops, pdftops, pstoraster, …

  ➢ Serial and parallel backends

  ➢ CUPS broadcasting/browsing for automatic availability of shared printers on remote CUPS client, replacement technology Bonjour has only broadcasting and no browsing, also incompatible with old CUPS versions

- **Dropped CUPS filters were put into there own source package on CUPS SVN → Seed for cups-filters**

- **cups-filters started by OpenPrinting end of 2011**

  ➢ Legacy filters package of CUPS with pure PS workflow filters dropped

  ➢ PDF workflow filters (formally maintained as CUPS add-on) added

  ➢ cups-browsed added end of 2012 for Bonjour browsing and legacy CUPS broadcasting/browsing

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- **Dropped CUPS filters made up a PostScript-based print workflow**

- **cups-filters supplies filters for the new PDF-based print workflow**

    - Filters from CUPS legacy package: commandtoescpx, commandtopclx, imagetoraster, pdftops, rastertoescpx, rastertopclx

    - PDF filters from OpenPrinting Japan: pdftopdf (old Poppler-based), pdftoraster (Poppler-based), pdftoopvp, imagetopdf

    - PDF filters from Google Summer of Code projects: texttopdf, pdftoijs, pdftopdf (new QPDF-based)

    - Also added: bannertopdf, textonly, pstopdf, rastertopdf, gstoraster

    - Dropped filters from CUPS legacy package: Bannertops, imagetops, texttops

- **cups-filters adopts serial and parallel backends**

- **cups-filters used with Ghostscript or Poppler as PDF interpreter, Ghostscript allows also PS input**

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- **CUPS 1.6.x drops CUPS broadcasting and browsing**
- **CUPS 1.6.x does Bonjour broadcasting as defined as PWG standard, but does no Bonjour browsing**
- **cups-browsed solves the problems caused by this (works with all apps):**
  - ➤ In **default configuration**, cups-browsed does **Bonjour browsing** and auto-generates local raw queues pointing to the discovered remote CUPS queues, solving the problem with remote CUPS 1.6.x servers
  - ➤ **Legacy Option** (via config file): cups-browsed does **CUPS browsing** on CUPS 1.6.x clients with older remote CUPS servers
  - ➤ **Legacy Option:** cups-browsed does **CUPS broadcasting** on CUPS 1.6.x servers for older remote CUPS clients.
  - ➤ **Legacy Option:** cups-browsed does **BrowsePoll**, on CUPS 1.6.x clients for servers with broadcasting turned off.
- **Alternative: GTK 3.8.x adds Bonjour browsing to the print dialog (GNOME/GTK apps only!)**

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- **Mobile systems have different printing system demands:**
  - ➢ Move between different local networks (home, office, …)
  - ➢ No local printers, only network printers
  - ➢ Simple UI, no printer setup tool
  - ➢ Lightweight printing stack → No driver/PPD library
  - ➢ Save battery power, avoid permanently running daemons
- **cups-browsed browses Bonjour broadcasts:**
  - ➢ It picks up remote CUPS queues
  - ➢ It picks up network-connected printers:
    - ▪ Only IPP printers, as they provide capability info
    - ▪ IPP Everywhere (PWG Raster, …, excellent capability info)
    - ▪ Other known PDLs: PDF, PostScript, PCL 5c/5e/6/XL
    - ▪ Auto-generate PPD, create queue
  - ➢ Removes queues on shutdown or when printer disappears
- **cups-browsed optionally shuts down automatically when not needed any more**

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# New features in cups-filters

- **New version numbering scheme**
  - ➢ Release with new feature(s): Minor number increased: 1.1.4 → 1.2.0
  - ➢ Release with only bug fixes: Release number: 1.2.0 → 1.2.1
- **cups-browsed subscribes to CUPS D-Bus notifications**
  - ➢ Load-balancing if there are equally-named remote queues on different servers
    - ▪ Before, there was only fail-over in this case
    - ▪ No load-balancing with jobs waiting on client (like CUPS class) or with jobs waiting on server
  - ➢ Automatic re-creation if a generated queue is accidentally deleted
  - ➢ Remembering default printer (if a generated queue is selected as such) and option settings without need of keeping generated queues when shutting down cups-browsed.

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- **Improvements on IPP printer queue auto-generation**

  ➢ Queues accept not only PDF but also PWG Raster and JPG, to comply with IPP Everywhere

  ➢ Determine the capabilities via IPP requests to get best possible configuration

  ➢ Queues can be based on auto-generated PPD or System V interface script, configurable

- **Auto-shutdown of cups-browsed can already happen when the generated queues run out of jobs, not only when they go away (configurable)**

  ➢ This allows auto-shutdown also if the avahi-daemon keeps running for non-printing tasks

- **cups-browsed allows setting of configuration directives and selection of alternative config file via command line**

  ➢ Devices with different operation modes (mobile phone gets desktop by connecting a monitor) can always use cups-browsed the right way

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# New features in cups-filters

- **More configurability of cups-browsed**
  - Configurable default option settings for newly generated queues
  - More fine-grained filtering of remote queues: BrowseAllow, BrowseDeny, BrowseOrder, BrowseFilter
  - Auto-generated queues can have host-name-based or IP-based (IPv4, IPv6) URIs (configurable)

- **Added LDAP support to cups-browsed**
  - Auto-generates queues pointing to printers announced by LDAP servers

- **cups-browed tested on Ubuntu Phone**
  - Works correctly running on-demand
  - Generates queues for IPP printers and remote CUPS queues when opening print dialog
  - Keeps queues until jobs are printed
  - Shuts down automatically

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# New features in cups-filters

- **Braille embosser support**

- **beh (Backend Error Handler) wrapper backend**

  - ➤ Wrapper around backend to make error handling more configurable

  - ➤ Re-write in C to replace the former Perl version of foomatic-filters

  - ➤ Several users asked for this

- **cups-filters can now also be built without Ghostscript, IJS, and/or Foomatic**

- **Lots of bug fixes and optimizations for reliability and compatibility with newer CUPS versions, non-Linux systems, and especially mobile devices.**

- **New features to be added (First 3 items worked on by 2 GsoC students)**

  ➢ Support of MuPDF as PDF interpreter for lightweight mobile systems

  ➢ rastertops filter

  ➢ Let pdftopdf flatten filled forms to static PDF

  ➢ Support for the new local queues in CUPS 2.2.x? Let cups-browsed create its queues as such local queues?

- **Move all OpenPrinting code to GitHub?**

# Questions?