Open Printing Project Updates - 2020

Joint PWG/Open Printing Meeting
May 5, 2020

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Aveek Basu - Program Manager
Till Kamppeter - Technical Lead

GSoC 2019 Projects

- **Generic Framework to turn legacy drivers consisting of CUPS filters and PPDs into Printer Applications:**
  Printer Applications are simple daemons which emulate a driverless IPP network printer on localhost, do the conversion of the print jobs into the printer's format, and send the job off to the printer. And as a physical driverless IPP printer they advertise themselves via DNS-SD and provide there capability information on (IPP) request from the client.

- **IPP: ipptool test suite for IPP System Service:**
  To develop additional ipptool test scripts for all new operations, objects, attributes defined in IPP System Service v1.0 (e.g., Create-Printer).

- **IPP: ipptool test suite updates for IPP errata updates:**
  To develop additional ipptool test scripts for IPP errata including IPP Document Object v1.1, IPP Job Extensions v1.1, and IPP 3D Printing Extensions v1.1.

- **Improve the pdftoraster filter to not need copying Poppler source code or using unstable APIs:**
  One of the filters, pdftoraster, rasterizes PDF files into CUPS/PWG Raster, uses Poppler but makes use of unstable APIs of Poppler, requiring frequent modifications when Poppler gets updated. The task for the student is here to improve pdftoraster's interface with Poppler, for example using Poppler's PPM (generic raster) output and converting it into CUPS/PWG Raster.

- **Turn the scp-dbus-service of system-config-printer into:**
  System-config-printer was written in Python and therefore scp-dbus-service is also written in Python. This makes it depend on Python and the related libraries to get loaded into memory when started. This can cause delays during boot. The student's task is to turn the scp-dbus-service of system-config-printer into C, either as D-Bus service (would work out-of-the-box with many GUIs) or as a C library with API (simpler), ideally both. This will make it easier to write printer setup tools in practically any programming language.

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GSoC 2019 Students

- **Dhiraj Yadav**
  Indian Institute of Technology Mandi

- **Sharad Shukla**
  Indian Institute of Technology Mandi

- **Aakash Lahoti**
  Indian Institute of Technology Kanpur

- **Tanmay Anand**
  Indian Institute of Technology Kanpur

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GSoC 2020 Projects cont..

- **Linux GUI application (can be part of GNOME printer tool) to admin MF devices using IPP System Service:**
  The student's task will be to create an appropriate printer configuration interface for system-config-printer or for the GNOME Control Center.

- **Common Print Dialog Backends (CPDB) Qt implementation:**
  The Qt Print Support framework should be updated with the CPD support. The goal is to provide the CPD GUI features and d-bus communications with the CPD backend support for printing from Qt5 applications on support platforms.

- **IPP scan (or virtual MF device) server (Scanner Application):**
  This task is about adding the scan server functionality. If you have a scanner connected locally (and it scans via SANE), share it as an IPP scanner, advertising itself and accepting jobs using the IPP driverless scanning standard.

- **General Printer Application SDK:**
  Goal is to get a universal Printer Application SDK (Software Development Kit) to not only convert classic drivers but also to create new printer drivers, from scratch, without PPD files.

- **Make Printer Applications configurable:**
  The student's task is to create libraries, utilities, contribute to the Printer Application framework to get configurability in the Printer Applications. One could perhaps have two students, one for IPP System Service and one for a web interface..

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GSoC 2020 Projects cont..

- **Speed/scaling optimization of cups-browsed:**
  In this project the student should analyse the performance of cups-browsed with many remote printers and optimize it, using things like multi-threading for example.

- **Extract raster data from PDFs for direct printing:**
  The student's task here is to find out about suitable raster-only PDF types (at least PCLm should be supported, the more file types, the better), make these files get identified, and write a CUPS filter which extracts the raster data and passes it on as CUPS Raster. The resulting code will get added to the cups-filters project.

Check here for more details..

7
Projects

14
Mentors

Highest count till date in
OP - GSoC history

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GSoC 2020 Mentors & Admins

- Till Kamppeter
- Michael Sweet
- Ira McDonald
- Smith Kennedy
- Danny Brennan
- Zdenek Dohnal
- Alexander Pevzner
- Thierry Ordissimo
- Dongxu Li

- Sahil Arora
- Deepak Patankar
- Rithvik Patibandla
- Nilanjana Lodh
- Dheeraj Yadav

Welcome
New
Mentors !!

- **Admins:**
  Till Kamppeter
  Aveek Basu

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OP Issues Fixed

- **117 # Graceful/Consistent handling of zero-page jobs :** *Jai Luthra*
- **130 # Huge issue with CUPSD : high CPU usage when starting with lot of printers :** *Jai Luthra*
- **95 # Replace cupsTempFd() with tmpfile() :** *Jai Luthra*
- **135 # CJK text file printing :** *Sambhav Dusad*
- **176 # HP Designjet T1100 Impossible to print landscape - always autorotate :** *Sambhav Dusad*
- **193 # Tray/InputSource setting is ignored :** *Sambhav Dusad*
- **201 # driverless generates wrong Input Slots for a Xerox B215 :** *Sambhav Dusad*
- **02 # openprinting-ppds: MemoryError :** *Sambhav Dusad*
- **194 # SAMSUNG C410W don't work :** *Priyadarshi Singh*
- **125 # The IPP Everywhere "driver" and system-config-printer :** *Priyadarshi Singh*
- **125 # NewBrowsePollQueuesShared option? :** *Vikrant Malik*

Thank You Students !!

Special Thanks to **Sambhav** for fixing highest number of bugs..

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OP Initiatives

- **Linux Plumber's Conference 2019 (Lisbon - Portugal):**
  OP participated at Linux Plumber's 19. We had a 4 hrs Micro Conference session on Printing in Linux. **Speakers:** Aveek, Till & Rithvik
  Link: https://linuxplumbersconf.org/event/4/sessions/52/#20190910
  Media Coverage: https://lwn.net/Articles/798916/

- **Linux Foundation Member's Summit 20:**
  Our submission, "Revitalizing an Open Source Community - Nurturing the new contributors to carry on the baton" was accepted for LFMS 20. Aveek & Till were invited as speakers. Unfortunately due to COVID 19 the event got cancelled.

- **Open Printing Mini Conference:**
  We had a mini Open Printing Conference with the students of Indian Institute of Technology Mandi at their campus on Nov 19 .

Rithvik, Till & Aveek at **Linux Plumber's 19**

Dhiraj, Aveek & Sahil with the other students of **IIT- Mandi**

Upcoming for 2020:

OP plans to participate in Plumber's 20 & Linux Foundation Mentorship Program

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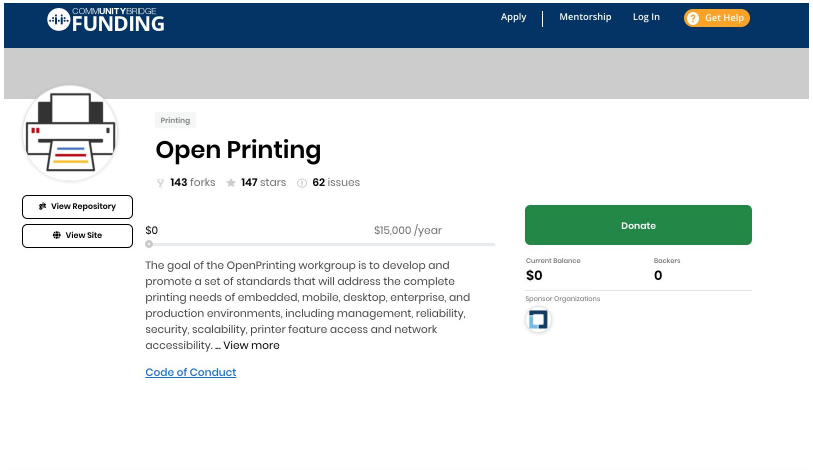
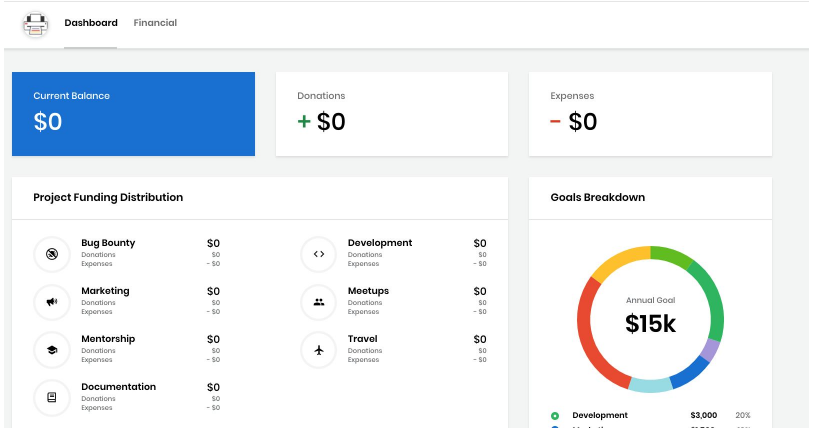
The Linux Foundation - OP Community Bridge





We need your support in growing Open Printing and making it a stronger organization.

Help us to help you in a better way..!!

Special Thanks to **Kate Stewart & Jeff Licquia** from The Linux Foundation for mentoring us..!!

Link to Community Bridge Project: https://funding.communitybridge.org/projects/open-printing

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OP Website is Full Functional

Web Page: http://www.openprinting.org/

Thank You

Dhiraj, Sahil, Nilanjana, Abhishek

and all our students who have worked on developing this new OP website.

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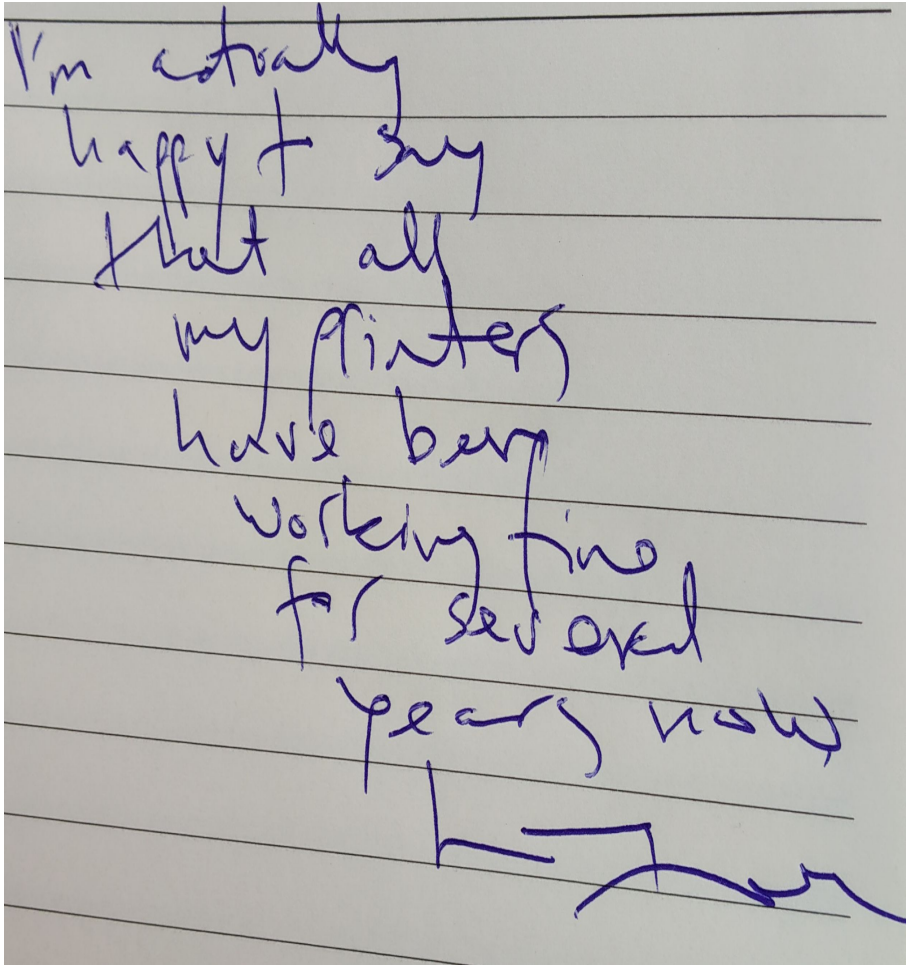
A Note..!!



"I'm actually happy to say that all my printers have been working fine for several years now…"

Linus Trovalds

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Thank You !!

Twitter: Open_Printing

Telegram: Join Us
Email: basu.aveek@gmail.com, till.kamppeter@gmail.com

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