



# The Linux Foundation

Google Summer Of Code - 2018

Joint PWG/Open Printing Meeting - Sunnyvale, CA  
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# Looking back at 2017

## Completed Projects:

7 Students 3 Projects

- **Common Print Dialog:** To make printing easy for the users of desktop systems and mobile devices. A well-designed print dialog where one can easily find the right printer under the available printers, set general, printer-specific, and document-specific options, preview the printout, and send the job. A single dialog to list all the CUPS, IPP and GCP print queues.
- **PCLm Filter:** Enabling PCLm printing using cups and cups filters to PCLm supported printers.
- **Flattening non-static content (like filled forms) in PDF files for printing:** Support printing the PDF files with dynamic form content.



# GSoC Project List for 2018

## Upcoming Projects:

6 Students 5 Projects

- **Make all filters in cups-filters use Poppler standard API or QPDF:** To make all filters in cups-filters which use Poppler only use the standard API of Poppler and no unstable, unofficial APIs. Switch over to QPDF if more adequate (like bannertopdf for example). This task would improve the maintainability of cups-filters.
- **Enhancements for iptool:** Write additional iptool scripts for coverage of operations and attributes that are required by IPP Everywhere, but not yet tested in IPP Everywhere Self-Certification process - also new scripts for other IPP specs (e.g., IPP Shared Infrastructure) for developers.
- **PWG Raster "ippdoclint" program:** To have a tool that can take an input PWG Raster document file and check it's structure and report any errors / warnings / issues with the document's structure or content. This could be used by an "ippserver" tool as a "command" to process the input files, which could then report on structural problems with the document content submitted with a Job, and report it's status accordingly.
- **Common Print Dialog Backends project:** D-Bus interface to separate the print dialog GUI from the communication with the actual printing system (CUPS, Google Cloud Print, ...) having each printing system being supported with a backend and these GUI-independent backends working with all print dialogs (GTK/GNOME, Qt/KDE, LibreOffice, ...).
- **Content-oriented printer auto-selection:** Cluster arbitrary collection of printers (all available printers) into one queue with merged PPD with all options of all printers available. Depending on the document and which options the user sets the printer where the job gets printed is selected automatically. There are option conflicts if the settings cannot be obeyed on one single printer.



# Non GSoC Project List for 2018

2 Students 2 Projects

- **Enhance "ippserver" to support the full range of IPP data types:** Enhance "ippserver" to support the full range of IPP data types (especially complex data types like (1 set Of (textWithLanguage)) and handling the strings being wrapped in single / double quotes, etc.
- **Qt print dialog completion:** 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.



# Student Selection Process

- Premier Universities were approached.
- A record number of 100+ CVs received during the period of **Nov 17 - Feb 18**.
- Prospective candidates were interviewed and finally **6** students were selected. Selected students were trained with basic assignments to make them ready for the projects.
- **2** student from previous year showed interest for working on 2018 projects.
- Google approved 13 slots to The Linux Foundation out of the requested 19 slots. Out of 13, for printing, 6 slots could be obtained.



# Selected Students

SI	Name	University	Student Speaks !!
1	<b>Sahil Arora</b>	<a href="#">IIT Mandi</a>	I have been an active contributor to OpenPrinting organization. C and C++ are the languages I have the most experience in. Have hands on experience in Python, Java and Ruby as well.
2	<b>Rithvik Patibandla</b>	<a href="#">IIT Kanpur</a>	Third year undergraduate in Electrical engineering department at IIT Kanpur. 2nd GSoC with OpenPrinting. Last year, I worked on the Common Print Dialog using Qt project.
3	<b>Akash Sharma</b>	<a href="#">IIT Mandi</a>	I am a 3rd year student pursuing bachelors in Computer Science. Over the past 1.5 years I have been working on several projects like module dependency analyzer software, projects on deep learning, etc. I am comfortable with c, cpp and python.
4	<b>Lakshay Bandlish</b>	<a href="#">IIT Delhi</a>	I'm a second year Computer Science undergraduate. I've developed a great liking for Linux and it's working over the past year since I did the project Linux from Scratch.
5	<b>Ayush Bansal</b>	<a href="#">IIT Kanpur</a>	I have always been a system's enthusiast and got very much interested in Linux after doing "Linux From Scratch" Project. I have been working in open source development for about one year.
6	<b>Deepak Patankar</b>	<a href="#">IIT Delhi</a>	I have done projects in system design and machine learning. I made Login System for one of the lab at IITD thus I have quite good expose with working in linux.
7	<b>Aakash Lahoti</b>	<a href="#">IIT Kanpur</a>	I have a great liking for math and programming. I have a background of machine learning and I am currently doing courses on computer architecture, data structures and algorithms.
8	<b>Gaurav Purohit</b>	<a href="#">IIT Mandi</a>	I am passionate about computer programming and have also participated in various hackathons organized at IIT Mandi.



# Mentors

SI	Project Name	Student	Mentor Details
1	Make all filters in cups-filters use Poppler standard API or QPDF.	Sahil Arora	Till Kamppeter Jay Berkenbilt
2	Enhancements for ipptool.	Akash Sharma Lakshay Bandlish	Smith Kennedy Ira McDonald Danny Brennan Aveek Basu
3	PWG Raster "ippdoclint" program.	Rithvik Patibandla	Smith Kennedy Danny Brennan Aveek Basu
4	Common Print Dialog Backends project.	Ayush Bansal	Till Kamppeter James Cloos
5	Content-oriented printer auto-selection.	Deepak Patankar	Till Kamppeter
*6	Enhance "ippserver" to support the full range of IPP data types.	Aakash Lahoti	Michael Sweet Ira McDonald Danny Brennan Aveek Basu
*7	Qt print dialog completion.	Gaurav Purohit	Dongxu Li

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## Q & A





Thank You

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