OpenPrinting 2008

PWG Meeting

Lexington, Kentucky, October 21-23, 2008

http://www.linuxfoundation.org/en/OpenPrinting

THE LINUX FOUNDATION

Presented by Glen Petrie

Top Level Overview

Activities

- Google Summer of Code

Active Participants: *(alphabetic order)*

Norm Jacobs	????	[SUN]
Till Kamppeter	Manager	[LF/OpenPrinting]
Robert Krawitz	Project Leader	[GutenPrint]
George Liu	???	[Ricoh]
Ira McDonald	Consultant	[High North, Inc]
Glen Petrie	Sr. SW Architect	[Epson]
Michael Sweet	Sr. Printing Sys Eng	[Apple]

- ???? Others ????
- ???? Japan members ????

OpenPrinting and the Google Summer of Code 2008

Till Kamppeter, OpenPrinting

PWG Meeting

Lexington, Kentucky, October 21-23, 2008

Prepared by Till Kamppeter

Google Summer of Code – The Program

code.google.com/soc

- ***Google Summer of Code*** **(GSoC) is a program ...**
  - ... that offers student developers stipends to write code for various open source projects.
  -
- ***Google Summer of Code*** **(GSoC) has several goals:**
  - Get more open source code created and released for the benefit of all;
  - Inspire young developers to begin participating in open source development;
  - Help open source projects identify and bring in new developers and committers;
  - Provide students in Computer Science and related fields the opportunity to do work related to their academic pursuits (think "flip bits, not burgers");
  - Give students more exposure to real-world software development scenarios (e.g., distributed development, software licensing questions, mailing-list etiquette).

Google Summer of Code – How it Works

code.google.com/soc

- ***The Steps***
  - Open source projects who'd like to participate in *Google Summer of Code* in 2008 should choose an organization administrator(s) to represent them;
  - Organization administrators will submit the project's application for participation on-line;
  - Google will notify the organization administrators of acceptance, and an account for the organization will be created in the *Google Summer of Code* web application;
  - Students submit project proposals on-line to work with particular mentoring organizations;
  - Mentoring organizations rank student proposals and perform any other due diligence on their potential mentees; student proposals are matched with a mentor;
  - Google allocates a particular number of student slots to each organization;
  - Students are notified of acceptance;
  - Students begin learning more about their mentoring organization and its community before coding work starts;
  - Students begin coding work at the official start of the program, provided they've interacted well with their community up until the program start date;
  - Mentors and students provide mid-term progress evaluations;
  - Mentors provide a final evaluation of student progress at close of program; students submit a final review of their mentor and the program;
  - Student uploads completed code to a Google Code hosted project.

Google Summer of Code - What is a Mentoring Organizations?

code.google.com/soc

- **A group running an active free/open source software project.**
-
- **The project does not need to be a legally incorporated entity.**
  - Find a list of past mentoring organizations on the GSoC 2005, 2006, 2007 and 2008 pages.
-
- **Mentoring organizations must produce and release software under an Open Source Initiative approved license in order to participate in the program.**

Google Summer of Code - What is the role of a Mentoring Organizations?

code.google.com/soc

- **Each mentoring organization is expected to provide:**
  - A pool of project ideas for students to choose from, publicly published by the mentoring organization as an “Ideas” list;
  - An organization administrator to act as the project's main point of contact for Google;
  - A person or group responsible for review and ranking of student applications, both those proposals which tie into the organization's "Ideas" list and "blue-sky" proposals;
  - A person or group of people responsible for monitoring the progress of each accepted student and to mentor her/him as the project progresses;
  - A person or group responsible for taking over for a student's assigned mentor in the event they are unable to continue mentoring, e.g. take a vacation, have a family emergency;
  - A written evaluation of each student participant, including how s/he worked with the group, whether s/he should be invited back should we do another *Google Summer of Code*, etc.
- In addition to these responsibilities, a mentoring organization should actively encourage each student developer to participate in the project's community in whichever way makes the most sense for the project, be it development mailing lists, idling in the project's IRC channel, participating in the project's forum, etc. A truly successful mentoring organization will work diligently to ensure that as many of their students as possible remain active project participants long after the conclusion of the program.

Projects for 2008

code.google.com/soc/2008

- ***Google Summer of Code*** **(GsoC) – 2008 General**
  - 191 participating Open Source mentoring organizations
  - 934 student participant completed their projects
-
- **Linux Foundation/OpenPrinting 2008 Projects/Students**
  - 4 Projects
    - Common Printing Dialog (CPD)
    - CUPS Filters for PDF Printing Work Flow
    - OpenPrinting Database Triage/Admin Web Application
    - PAPI Implementation for CUPS
  - 5 Students
    - Each individual worked for a 3 month period (15 people months of work effort)
  - Status
    - All students finished the GSoC successfully (Some are continuing their efforts.)
    - All the work of the students is intended to be used in the appropriate projects

Project: The Common Printing Dialog (CPD) - 1

www.linuxfoundation.org/en/OpenPrinting/CommonPrintingDialog

- **Objective:**
  - Provide a Single Print Dialog for all desktops and all applications
    - User has the same print experience for application A, B, C, ...
- **History:**
  - The CPD was designed by a team of OpenUsability Group in collaboration with OpenPrinting.
    - *www.mmiworks.net/eng/publications/labels/openPrinting.html*
    - *wiki.openusability.org/printing/index.php/Specification*
- **Activities:**
  - 1. D-Bus API to bridge applications and the CPD
  - 2. Qt/KDE based CPD
  - 3. GTK/GNOME-based CPD
- **Students:**
  - Activity 1 & 3: Lars Uebernickel
    - Master Program Computer Science at Otto-Von-Guericke University, Magdebury, Germany.
  - Activity 2: Alexander Wauck
    - Bachelor Program Computer Science at Gustavus Adolphus, St. Peter, Minnesota
- **Mentors:**
  - Jonathan Riddell [KDE in Ubuntu]
  - Till Kamppeter [LF/Open Printing]

Project: The Common Printing Dialog (CPD) - 2

www.linuxfoundation.org/en/OpenPrinting/CommonPrintingDialog

- ***D-Bus API to bridge applications and the CPD***
- **Current State**
  - API Specification Complete and consist of three parts:
    - Dialog UI specs:
      - The user interface design from OpenUsability (for desktop developers)
    - The CPDAPI:
      - The D-Bus API for invoking the dialog (for application developers)
    - The PPD extensions:
      - How to control the presentation of the driver options (for driver developers/printer manufacturers)
    - www.linuxfoundation.org/en/OpenPrinting/CPDAPI
- **Road-Map/Next-Steps**
  - None at this time.

Project: The Common Printing Dialog (CPD) - 3

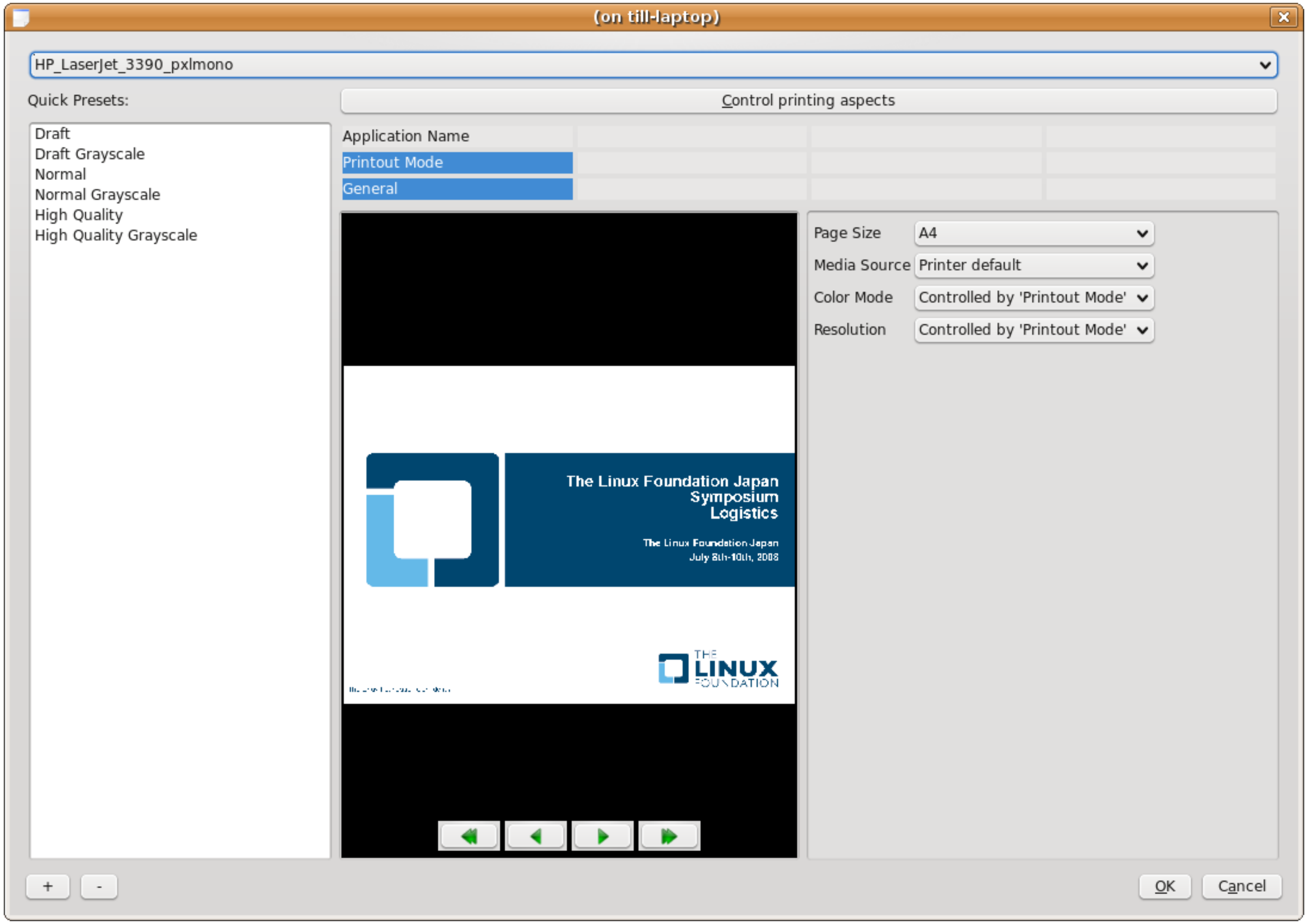
www.linuxfoundation.org/en/OpenPrinting/CommonPrintingDialog

- ***Qt/KDE based CPD***
- **Current State**
  - 75% of the QT/KDE GUI complete
    -
- **Road-Map/Next-Steps**
  - A proposal will be made to KDE/Qt and GNOME/GTK Desktop Projects.
    - Dialog need to be completed – a number of small missing items.
      - Alex and Lars will do so in the next weeks
    - Provide patches to the GUI libraries to use CPD
      - Lars will do this work

Common Printing Dialog: Screen Shot

wiki.openusability.org/printing/index.php/Specification

Common Printing Dialog, Qt/KDE version



(on till-laptop)

HP_LaserJet_3390_pxlmono

Quick Presets:

- Draft
- Draft Grayscale
- Normal
- Normal Grayscale
- High Quality
- High Quality Grayscale

Control printing aspects

Application Name
Printout Mode
General

Page Size: A4
Media Source: Printer default
Color Mode: Controlled by 'Printout Mode'
Resolution: Controlled by 'Printout Mode'

The Linux Foundation Japan Symposium Logistics

The Linux Foundation Japan
July 8th-10th, 2008

Project: CUPS Filters: PDF Printing Work Flow - 1

https://www.linuxfoundation.org/en/OpenPrinting/PDF_as_Standard_Print_Job_Format

- **Objective:**
  - Provide a collection of “Fliters” (Transforms) “To & From” PDF
- **History:**
  - OpenPrinting Summit 2006 it was discussed and agreed to change from PostScript to PDF as the Standard Print Job Format.
  - OpenPrinting/Japan has implemented the following “Filters”
    - pdf-to-pdf, image-to-pdf, pdf-to-raster, pdf-to-opvp
- **Activities:**
  - 1. Create the “To” Filter: test-to-pdf
  - 2. Create the “From” Filter: pdf-to-ijs
- **Student:**
  - Activity 1 & 2: Tobias Hoffmann
    - Master Program in Mathematics/Computer Science , Aachen, Germany
- **Mentor:**
  - Hin-Tak Leung [Independent Developer, Laser Drivers]

Project: CUPS Filters: PDF Printing Work Flow - 2

https://www.linuxfoundation.org/en/OpenPrinting/PDF_as_Standard_Print_Job_Format

- **Current State**
  - Both filters completed
  - text-to-pdf: accepted for inclusion in CUPS
    - Supports full UTF8, including capability to convert CJK text
  - pdf-to-ijs: rejected for inclusion in CUPS
    - CUPS current plan is only support “CUPS Raster”.
- **Road-Map/Next-Steps**
  - Debian and Ubuntu/Intrepid are the first implementations of the PDF workflow.
    - They will incorporate both the OpenPrinting/Japan and the GsoC PDF “To & From” Filters.
  - Release of Foomatic 4.0
  - Integration of PDF filters as standard part of CUPS:
    - pdftopdf, imagetopdf, texttopdf, pdftoraster
  - Release pdftoijs, pdftopvp, pstopdf, cpdftocps separately (rejected by CUPS)
  - Encourage GNOME/GTK apps and OpenOffice.org to send print jobs in PDF

Project: CUPS Filters: PDF Printing Work Flow - 3

https://www.linuxfoundation.org/en/OpenPrinting/PDF_as_Standard_Print_Job_Format

- **Implementing the PDF Printing Work Flow**
  - Install Foomatic 4.0 (It takes also PDF as input now)
  - Add CUPS filters for PDF (to make CUPS process jobs based on PDF)
  - Change cost values of CUPS filter rules to prefer PDF filters
  - Patch foomatic-rip PPDs to accept PDF input
  - Install newest GhostScript (more reliable PDF rendering)

Project: CUPS Filters: PDF Printing Work Flow - 4

https://www.linuxfoundation.org/en/OpenPrinting/PDF_as_Standard_Print_Job_Format

Information Only

- **Important Web Pages**
  - Download Filters:
    - http://sourceforge.jp/projects/opfc
      - The package names are texttopdf and pdftoijs.
  - SVN repositories:
    - http://svn.sourceforge.jp/cgi-bin/viewcvs.cgi/texttopdf/?root=opfc
    - http://svn.sourceforge.jp/cgi-bin/viewcvs.cgi/pdftoraster/branches/?root=opfc
  - A general web page about the PDF printing work flow with motivation, links, and instructions here:
    - https://www.linuxfoundation.org/en/OpenPrinting/PDF_as_Standard_Print_Job_Fo
  - Debian and Ubuntu include the filters
    - They are all included in their CUPS packages now.
      - https://www.linuxfoundation.org/en/OpenPrinting/PDF_as_Standard_Print_Job_Format

CUPS Discussion on Filters:http://www.cups.org/str.php?L2897

Project: OP Database Triage/Admin Web App - 1

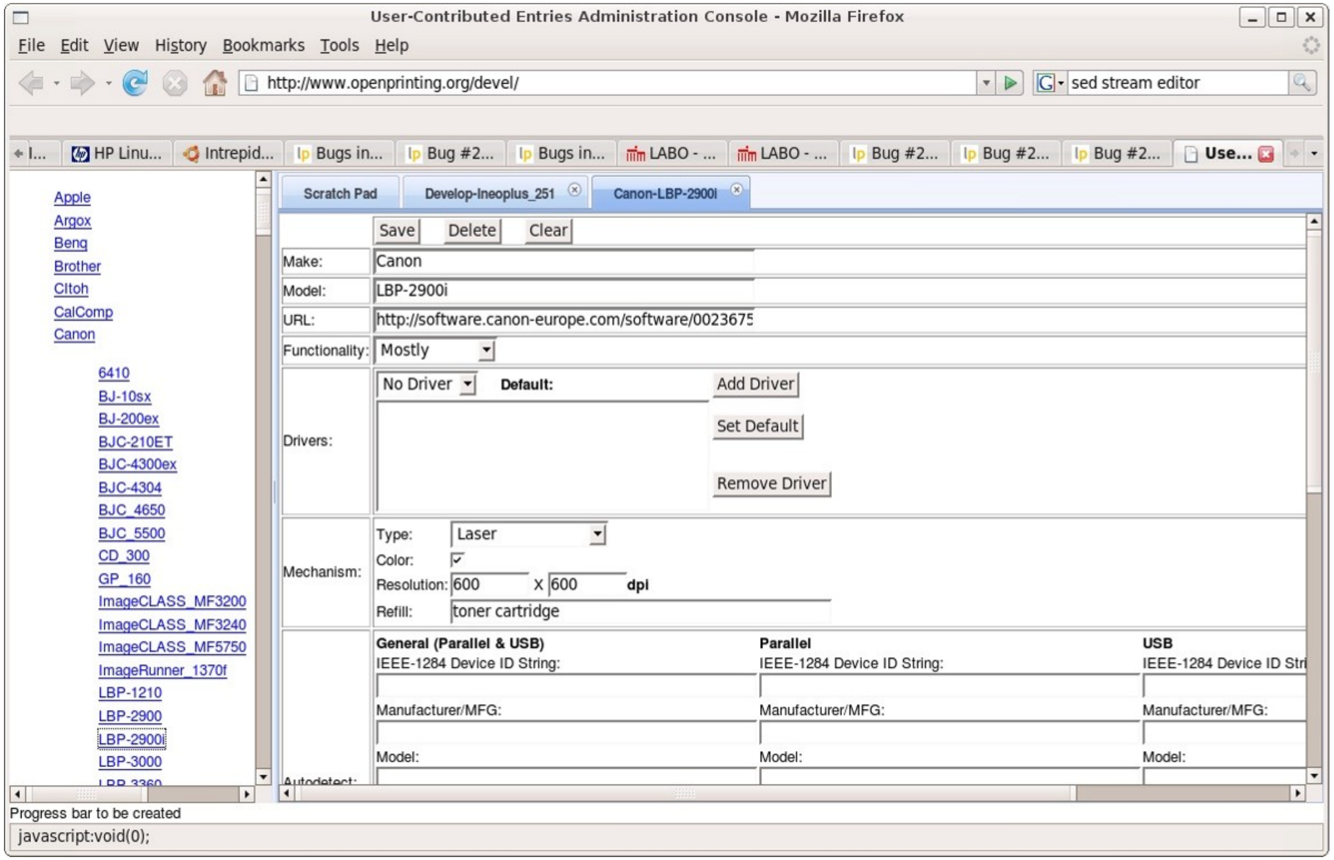
- **Objective:**
  - Provide an OpenPrinting Database Triage/Admin Web Application to
    - Quickly overview of user-contributed entries
    - Easily triage of good and useless entries
    - Identify duplicates entries
    - Move of “Good” entries to the OpenPrinting database
- **History:**
  - The OpenPrinting database accepts printer entries and comments from visitors
  - There are more than 1200 new printer entries
    - Many are Spam
    - Other are not useful
- **Activities:**
  - 1. Create the Triage/Admin Web Application.
- **Student:**
  - Activity 1: Subhandkar Sett
    - Master Program Computer Science, Anna University, Chennai, India
- **Mentor:**
  - Till Kamppeter [LF/Open Printing]

Project: CUPS Filters: PDF Printing Work Flow - 2

- **Current State**
  - Completed the part to triage for user-contributed printer entries.
- **Road-Map/Next-Steps**
    - Subhandkar plans continued work on the project during the next 6-months as a school project.
  - Complete Printer Entry Triage Facility
  - Complete Triage Facility for Commenting
  - Extend Upload and Triage Facility for driver packages and PPD files
  - Develop Scripts for Server Administration

URL for User-Contributed Printer Entry :http://www.openprinting.org/edit_printer.cgi

Project: CUPS Filters: PDF Printing Work Flow - 2



User-Contributed Entries Administration Console - Mozilla Firefox

http://www.openprinting.org/devel/

Apple
Argox
Benq
Brother
CItoh
CalComp
Canon

6410
BJ-10sx
BJ-200ex
BJC-210ET
BJC-4300ex
BJC-4304
BJC_4650
BJC_5500
CD_300
GP_160
ImageCLASS_MF3200
ImageCLASS_MF3240
ImageCLASS_MF5750
ImageRunner_1370f
LBP-1210
LBP-2900
LBP-2900i
LBP-3000
LBP-3360

Make: Canon

Model: LBP-2900i

URL: http://software.canon-europe.com/software/0023675

Functionality: Mostly

Drivers: No Driver Default:

Mechanism: Type: Laser
Color: ☑
Resolution: 600 X 600 dpi
Refill: toner cartridge

Autodetect:

General (Parallel & USB)	Parallel	USB
IEEE-1284 Device ID String:	IEEE-1284 Device ID String:	IEEE-1284 Device ID Stri
Manufacturer/MFG:	Manufacturer/MFG:	Manufacturer/MFG:
Model:	Model:	Model:

Progress bar to be created

javascript:void(0);

Left Column:
A list of all user-contributed printer entries.

Right Column:
A. Selecting an entry opens it in a tab on the right which can be browsed / edited.

"Delete" Button: Removes an entry (i.e. Spam)

"Save" Button: Saves changes

“Submit" Button: Submit a good entry into Foomatic.

Future:
Future addition will add a side-by-side view entries in Foomatic removing duplicates.

Similar user interface planned for comments, PPDs and drivers.

Project: PAPI Implementation for CUPS - 1

- **Objective:**
  - Provide an Implementation of PAPI Configured for CUPS
- **History:**
  - The Printing API (PAPI) is a printing-system-independent API for the communication between applications and the printing system
- **Activities:**
  - 1. Create an instantiation of PAPI configured to work with CUPS
- **Student:**
  - Activity 1: Cherif Yaya
    - Bachelor Program in Computer Science, Technological University of Compiegne, France
- **Mentor:**
  - Norm Jacobs [SUN]

Project: PAPI Implementation for CUPS - 2

- **Current State**
  - ????
- **Road-Map/Next-Steps**
  - ????

Admin web app for OpenPrinting database: Further Info

- OpenPrinting server will get possibility to log in with Linux Foundation account
- Contribution of printer entries or comments will only be possible when logged in (to avoid changes from bots)
- Admins (and moderators) can triage entries with web app
- Contribution of PPDs or driver packages via web app or hot folder
- Automatic inclusion of contributions from trusted users (like printer manufacturers)

CUPS Implementation of PAPI: Further info

- [Norm, this space is yours!]

OpenPrinting WG Asia/Japan Regional Group

OPFC (OpenPrinting Framework Consortium)

TORATANI Yasumasa, OpenPrinting

PWG Meeting

Lexington, Kentucky, October 21-23, 2008

Prepared by Till Kamppeter

OpenPrinting WG Asia/Japan Regional Group

- **Activities in 2008**
  - **Vector Printer Driver API (OPVP)**
  - **CUPS PDF Filters**
- **Active Participants (alphabetic order)**
  - Atsushi Sekiguchi (Konica Minolta)
  - Hidenori Ishii (Avasys)
  - Hidenori Kanjo (BBR)
  - Koji Otani (BBR)
  - Naruhiko Ogasawara (Ricoh)
  - Olaf Meeuwissen (Avasys)
  - Osamu Mihara (Fuji Xerox)
  - Takashi Kunai (The Linux Foundation)
  - Tatsuya Saito (NEC Soft)
  - Toshihiro Yamagishi (Turbolinux)
  - Yasumasa Toratani (Canon)
  - Yasushi Osonoi (The Linux Foundation)
  - Yoshinari Chigusa (Ricoh)

Vector Printer Driver API (OPVP) - Activities and Current State

- **Define Printer Driver API Supporting High Level Graphics Functions**
  - Vector drawing API, such as drawing lines, bezier curves, rectangles, images, etc..
  - Renderer (such as poppler and Ghostscript) calls a driver via the API, then driver generates printer command data

- **Version 0.2 – Former Spec.**
  - API Spec. - released in 2003
  - HP PCL5, EPSON, NEC and Canon Drivers have been released so far
  - **Integrated code into many distros as “opvp” driver with GS**

- **Version 1.0 – Latest Spec.**
  - ftp://ftp.pwg.org/pub/pwg/fsg/vector/pdapispec-1.0rc5.odt
  - Implementation and driver testing has been completed
  - NEC and Canon Drivers have been tested
  - **Version 0.2 and 1.0 compliant “opvp” driver has been committed to GS**
    - Both the opvp 0.2 compliant printer driver and the opvp 1.0 compliant printer driver work under the new “opvp” code w/o any modifications
  - **Ready to be released with Ubuntu and Debian**

CUPS PDF Filters - Activities and Current State

- **Develope Four CUPS PDF Filters**
  - imagetopdf, pdftopdf, pdftoopvp and pdftoraster
  - Already implemented and released at http://sourceforge.jp/projects/opfc
- **SVN Repositories**
  - http://svn.sourceforge.jp/cgi-bin/viewcvs.cgi/imagetopdf/?root=opfc
  - http://svn.sourceforge.jp/cgi-bin/viewcvs.cgi/pdftopdf/?root=opfc
  - http://svn.sourceforge.jp/cgi-bin/viewcvs.cgi/pdftoopvp/?root=opfc
  - http://svn.sourceforge.jp/cgi-bin/viewcvs.cgi/pdftoraster/trunk/?root=opfc

CUPS PDF filters	Description
imagetopdf	Convert several kind of images to PDF
pdftopdf	Convert PDF created by application or previous CUPS filter to layouted (N-up, scaling, etc) PDF
pdftoopvp	Parse PDF and call a driver which is compliant with Vector Printer Driver API (OPVP)
pdftoraster	Parse PDF and call a driver which is compliant with CUPS raster interface

OpenPrinting WG Asia/Japan Regional Group - Road-Map/Next-Steps

- **Vector Printer Driver API and Implementation**
  - Maintain "opvp" code and fix bugs if found
  - Investigate further requirement, such as text, color, etc, and enhance the API
  - Develop driver example code, such as PCL6, etc

- **CUPS PDF Filters**
  - Maintain filters code and fix bugs if found
  - Implement pdftoopvp using "libpopper" to prepare good code maintenance
    - imagetopdf, pdftopdf and pdftoraster have been implemented using external PDF library "libpoppler", but not yet pdftoopvp

- **Seek New Requirements for 2009 Activities**
  - API Standardization as well as implementation
  - Printing and scanning

Questions?

Any questions?