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Testing of Linux Printing Workflow Components

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Agenda

- How Ricoh Tests Linux Printer Drivers
- Problems Found During Ricoh Linux Driver Testing
- Problems in the Quality Control of Linux Printing System?
- How Can the Situation be Improved?





Testing Ricoh Driver Against New Linux Distributions

- Fixed testing/release cycle (to plan for engineering resources).
- Release cycle is not in sync with Linux Distributions release cycle. (Red Hat: Every 6 months; Open SUSE: Every 8 months; Ubuntu: Every 6 months)
- Testing limited to certain Linux Distributions. (Fedora, Open SUSE, Ubuntu, RHEL, SLE, etc)
- Only General Available distributions are tested (No pre-release distributions)



Testing New Ricoh Printer Drivers

- Focusing on Printer Driver Functionality.
- Print jobs submitted from command line to actual printers.
- Defects specific to Ricoh devices have the highest priority. (Usually a must fix)
- Submit bug report to appropriate components in Linux Printing Subsystem.
- Work around general problems in Linux Printing Subsystem

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Defects in Linux Printing

- Majority of the problems reported during Ricoh's driver testing are not specific to Ricoh.
 - Some problems still exist today.
 - <http://cups.org/newsgroups.php?s3995+gcups.development+v4014+T0>
CUPS Print Self Test Page does not work for non-Postscript printers
 - http://bugs.ghostscript.com/show_bug.cgi?id=691880
460k PDF file renders into 89M PCL file by pxlcolor driver
 - https://bugzilla.redhat.com/show_bug.cgi?id=667357
Infinite loop and error output processing PDF file
 - https://bugs.freedesktop.org/show_bug.cgi?id=32746
poppler/cairo creates distorted pdf print file
- * The list goes on...

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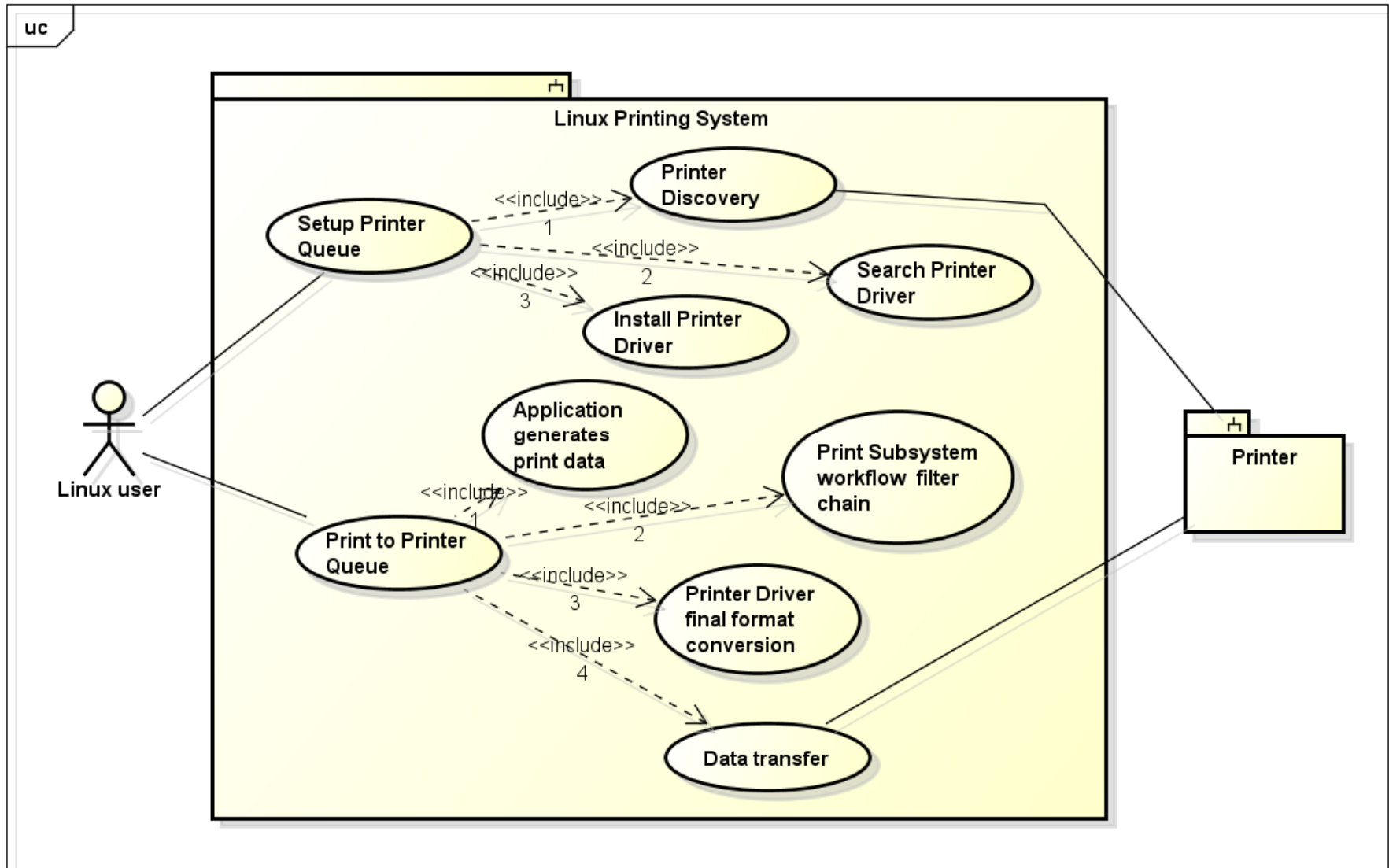
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Many New Features in Linux Printing

- New PDF Workflow filters
- New versions of PDF rendering and writing libraries. Poppler/Cairo.
- New Ghostscript capabilities
- New foomatic-rip 4.0
- New printer discovery capabilities in CUPS
- Openprinting Distribution Independent driver packages
- Fedora Driver Packages with 1284Device ID tagging
-

Are they well tested?

Printing Subsystem Components





Whom is Testing Which Module? How is Testing Done?

- Ricoh tests printer driver final format conversion module.
- Not enough to guarantee Linux user a smooth printing experience.
- Other module also need testing
- Need to understand test coverage provided by Linux distributions.

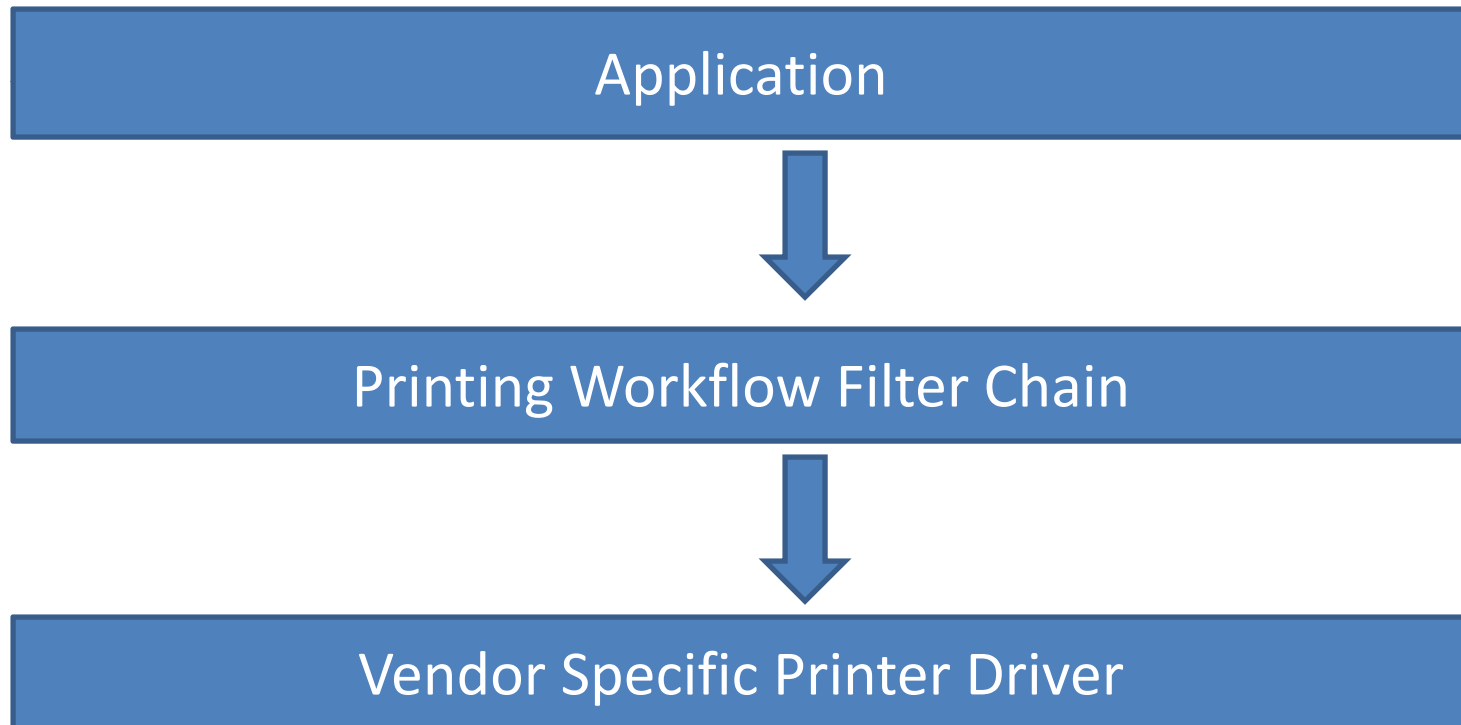
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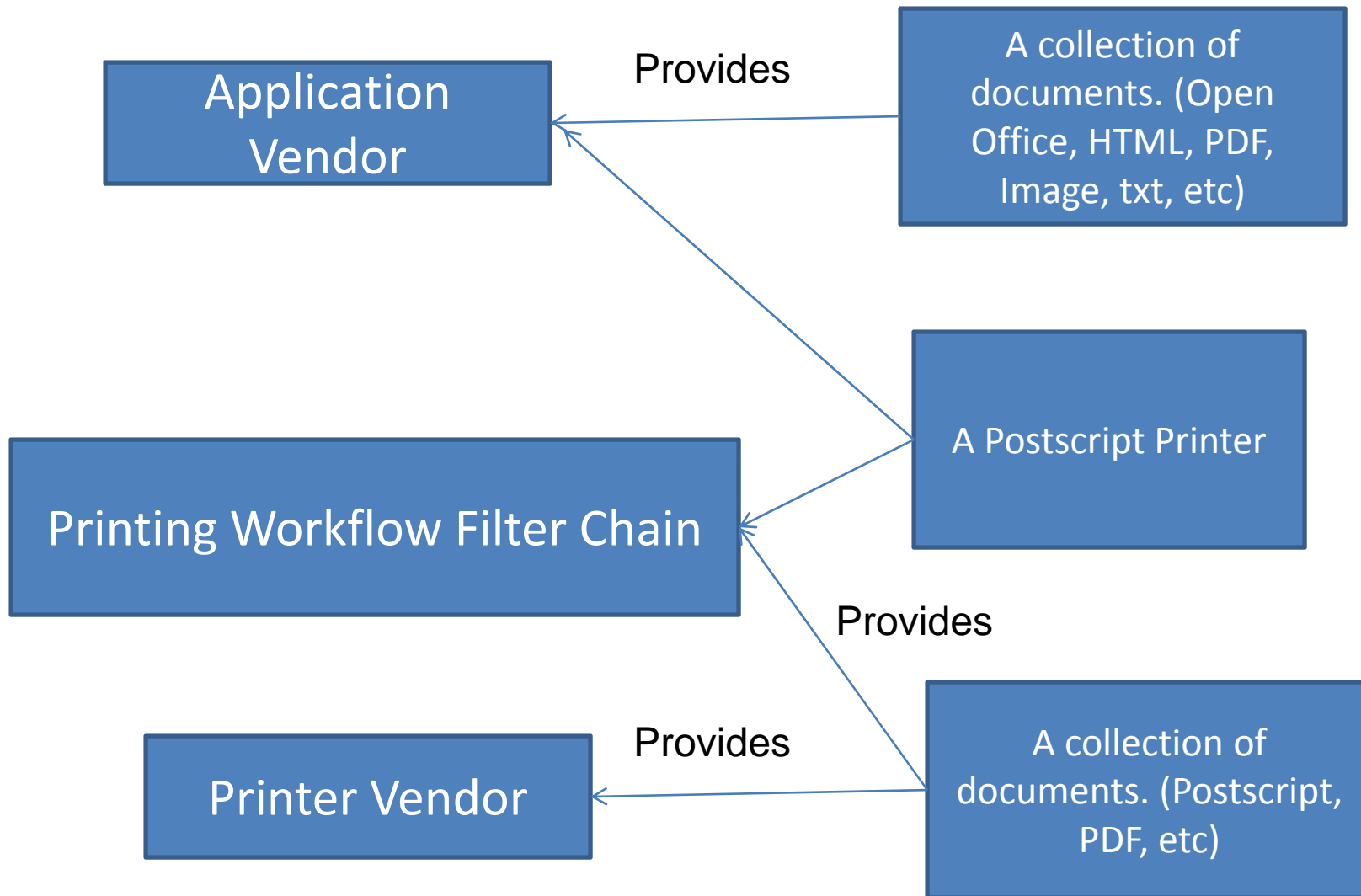


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Every Layer Should Do Printing Test



Reference Linux Printing Test Suite?





Reference Linux Printing Test Suite?

- Application vendor and Linux Distributions use a Postscript printer to validate Printing.
- Compile a collection of documents of application format (Open Office, HTML, PDF, Image, Txt, etc) and provide it to Application Vendors to test on the Postscript printer.
- Compile a collection of print data files (PDF, Postscript, generated by application) to Linux Distribution to test on the Postscript printer.
- Give the collection of print data files (PDF, Postscript, generated by application) to Printer vendor to test their devices.

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Could There be an Effective Spool Print Test?

- This idea has been brought up many times before.
- Create printer queue for each driver. (print to dev/null or print to file)
- Submit random files with random picked options.
- Verify log or size of ripped file.

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How to Discovery, Driver Matching and Installation?

