

Standards Working Group

Open Printing
(Free Standards Group)

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Document Information

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This document defines the proposed Standards Working group position and plan for a Linux Standard on printing.

The information in this document is subject to change without notice.

If updates and changes need to be made to this document, please contact the Free Standards Open Printing group chairperson. Currently that is:

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Overview

This document provides the initial declaration of the problem and an abstract of the proposed solution for a set of standards around printing in Linux and the open source community. This document will cover the following areas:

- ❖ General description of problem,
- ❖ Brief abstract of the proposed solution,
- ❖ Current existing solutions,
- ❖ Current existing projects/working groups related to printing,
- ❖ Companies and organizations who would benefit from a print standard,

Problem Statement

Why are we talking about printing and Linux? Aside from the fact that we are all interested in printing and Linux for our own reasons, other folks are interested because of the success of Linux! It has successfully penetrated the server computing space and is making inroads on the client computing space, as well (ref - City of Key Largo). Given this success of Linux, printing is receiving new attention because, as we all know, a computer has limited value if generating hard copy is impossible or difficult. Not too long ago, the majority of discussions about printing and Linux circled around imaging technologies and Ghostscript drivers. Now, with this new success, the discussions are about enterprise-ready printing: management, reliability, scalability, printer feature access, etc. Essentially, the computing industry is expressing its needs upon Linux printing.

Proposed Solution (abstract)

What is needed?

A scalable printing system architecture to:

- Support enterprise printing needs,
- Enable easy plug-in support for new printers,
- Enable distros to pick and choose pieces,
- Integrate with desktop UI's.

The high-level requirements for a printing system are:

- Available to everyone (as easy to distribute as Linux),
- Supports security,
- Easy to install, use, configure, troubleshoot,
- Command Line I/Fs and GUIs,
- Printer feature selection,
- Processing can be distributed across networks,
- Architecture not dependent upon transport protocols,
- Functional components managed independently:
 - Developed independently based on agreed upon I/Fs,
 - Enables pick-and-choose instances,
 - Enables "value-add" of specific implementations components,
- Easy to add support for new models of printers.

How are needs addressed?

A proposed standards working group is established to address these needs and issues. The general goals for this group are:

1. Consensus is needed to pull this off - no one or small group can do this alone. However, recognize the work that is being done and has been done that contributes to the printing system architecture.
2. Focused group effort is required to define the APIs between the major components. This will enable parallel development of the components.
3. Identify owners for APIs. These owners are not the sole developers of the APIs. In fact, they may not be developers at all. They need to focus on the APIs themselves, coordinating development activities supporting the APIs.
4. Recognize the priorities for the development of the major components. The prioritized list should allow us to focus our efforts on the most important components, according to our customer's needs.

How are solutions delivered?

The standards group is composed of members as defined in the OP Organizational document (refer to *OP Organizational.pdf*). Voting versus non-voting members are defined in the OP Decision making process (refer to *OP Decision Process.pdf*). It is expected that each party will have specific interests in some aspect of the printing infrastructure. As well, there will be parties who have general interest in all or large portions of the infrastructure. Since there will most likely be more areas of focus (called task areas for documentation purposes), a prioritized list should be established. This allows the most important components to be addressed first. However, it needs to be understood. In order to prioritize a component, one must have an overall understanding of the printing infrastructure. Understanding the dependencies between different components will determine the sequence of development.

The ultimate delivery from this work is a set of standards around Linux and Open Source printing. Because printing has such a multi-faceted aspect to the operating system, one standard will not satisfy the needs being expressed by the various industry representatives. Multiple standards will need to be established that are focused on the prioritized components identified in the overall architecture.

It should be noted that each standard may vary in its concept, description and content. Some may be established APIs that independent, parallel components may use to communicate between each other. Some may be established processes and communication types well established in the overall printing industry.

From the standards body perspective the following deliverables should be provided:

- High-level architecture overview of the Linux Print environment.
- Identified, prioritized areas of focus for standardization.
- Identified owners of each component.
- Identified tasks in those components.
- Identified schedule for a components area of development.
- Identified dependencies.
- Up-to-date action item / issue list.
- Component Standards document.
- Overall Standards document describing linkages to each component's area of standardization.

How are solutions communicated?

Logistics-wise, the standards group should have two major goals:

1. Mechanisms to allow for clear and concise communication between the different members. This communication needs to take into account that the group will be composed of different members of the computing industry and from different regions of the globe.
2. Mechanisms to allow progress viewing from a high level to low level, and vice versa, perspective. Processes should be in place to allow small groups to focus on a component and then bring results/questions/issues/etc. back to the main body for review and help.

Communication is defined in the OP Communication document (refer to *OP Communication.pdf*).

What is the process?

As with any decision making committee, there needs to be some set of rules and guidelines the group will follow in order to establish a set of decisions and forward movement. The basis of these guidelines falls within the same process steps used by the Li18nux.org group, also within the Free Standards Group.

The process for the Open Printing working group is outlined in the OP Decision Making document (refer to *OP Decision Process.pdf*).

Current Solutions

Under today's Linux and Open source architectures there are a number of ways to do printing. This is also the very reason that a print standard is needed. Currently, application writers and users have to understand and use one of several different solutions for printing. The best way to break down the different types of solution is as follows:

- ❖ PostScript solutions,
- ❖ Raster solutions,
- ❖ Data-driven driver solutions,
- ❖ Basic print capabilities,
- ❖ Enhanced capabilities.

Unfortunately, users usually do not have good options to meet all their needs.

Current Projects/Working Groups

The printing industry is filled with multiple working groups with focus in various aspects of the printing space. Focus ranges from print language standards, device communication standards, device discovery standards, device status standards, and job definition standards.

The work of this printing group is, again, to not introduce a new set of standards and APIs but to build on a set of defined standards in place or to be updated. This group's responsibility is to find the gaps in printing as it relates to different standards and as it relates to Open Source / Linux. Then it is the job of this group to work with the identified standards area to fill in the identified specific gap area.

Beneficiaries

Who in the industry cares about Linux printing and why? Computer manufacturers and retailers, like IBM, HP, Sun and Dell, care because they sell computer systems and the customers buying them are demanding printing support for both clients and servers. The customer's expectations are based on the Windows and Unix functionality they have become accustomed to. To meet their customer's expectations, the computer manufacturers and retailers are willing to invest \$ and people.

Printer manufacturers/vendors also care about Linux printing. Their interest is from a customer satisfaction perspective. They realize that a relatively small group of customers (who are very vocal!) are creating some PR problems for them. They need to address these problems, but want to minimize their investment and maximize their return.

A third group that cares about Linux printing is the Linux distribution vendors. Their customers are also demanding printing support. These folks would like to pick and choose from the available free programs to build a printing system they think would satisfy their customers. The distro vendors are currently investing in Linux printing because there are missing pieces for their customer's printing system needs (printtool, printerconf, etc).

A fourth group interested in Linux printing is the Linux desktop developers/distributors. These folks are trying to provide desktop printing that is better than the Windows use model - their customers are demanding easy-to-use printing from graphical user I/Fs.