Presto - OpenSolaris Printing Make Easy

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Presenting:
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Agenda

- Why presto?
- Printer Management tools on Unix
- Presto
  - Architecture
  - Print Manager – basic requirements
  - Supported print systems
  - Programming language
  - How many threads
  - Group manager
  - Desktop integration
  - Road map
Presto – Printing Made Easy

• Why presto?
Presto – Printing Made Easy

• Why presto?

Why not?
Presto – Printing Made Easy
Presto – Printing Made Easy

• Why presto?

  – OpenSolaris Printer set up gap
    (Hardest task to complete in on survey)
  – Improve user's experience
    • auto-detection
    • auto-discovery vs manual specification
  – Use SMF for managing network queue discovery/advertising services
  – Tighter desktop integration
Printer Management tools on Unix

Tools wrapped around command line's output

Tools based on printing libraries
Printer Management tools on Unix

/usr/dt/bin/dtprintinfo
/usr/bin/gnome-printinfo
/usr/sbin/printmgr
Printer Management tools on Unix

- GNOME CUPS Manager
- PrinterDrake
- System-config-printer
- PRESTO
GNOME CUPS Manager

• Dave Camp 2003
  – Gnome-cups-manager
  – Gnome-cups-add

• GNOME, GTK+, libcups
• Integrated with desktop (notification area)
• User still needs to fill text entries
GNOME CUPS Manager

- Eric Redmond - “Cups horror” [0]

[0] http://catb.org/~esr/writings/cups-horror.html
PrinterDrake

• Plug and Print (Parallel/USB)

• Network printer discovery using SNMP

• Fuzzy matching of Manufacturer and model name

• configuration of sharing of CUPS printers

• automatic download of certain firmware if needed
System-config-printer
Architecture of Presto
Local printer discovery

Kernel

Device HotPlug (sysevent)

devfsadmd

EC_add/EC_remove
ESC_printer (sysevent)

hald

Device Added/Removed (DBUS signal)

ospm-applet

HAL Dev Tree

Solaris LP Print System

libpapi

lpadmin

PrinterAdded (DBUS signal)

Add Queue Dialog

ospm-pm

Desktop Notification Bubble
Network printer discovery

Network Printer Discovery (snmp)

Network Printer Discovery (mDNS)

HAL Dev Tree

Solaris LP Print System

ospm-applet

ospm-pm

hald

libpapi

Desired Notification Bubble

Device Added/Removed (DBUS signal)

PrinterAdded (DBUS signal)

lpadmin

Desktop Notification Bubble

Network Printer Discovery (snmp)

Network Printer Discovery (mDNS)
Print manager – basic requirements

- The tool must get away from parsing command line program's output.

- The tool must be able to handle a large number of queues reasonably as some environment contains.

- The tool must provide functionalities adequately to replace some existing tools such as gnome-printinfo and Solaris printmgr on the desktop.

- Seamless integration into the desktop.
Print system supported

- Solaris LP

- CUPS is **not** supported at the moment
  (has been integrated into Solaris Nevada build 87)
Programming language

C as a natural choice

- Solaris Implementation of PAPI is written in C

- GTK+ toolkit is written in C and well suited to implement Desktop GUI
Threads – How many?

- GUI
- Queue states
- Job States
Why Printer Group Manager
Group types

- Special
  - All Printers (System)
  - Favorites (User)
- Static
  - list of named print queues
- Dynamic
  - list of queues derived from specification of printer's attributes
How groups are used?

• Through extension to GTK+ Print Dialog for all arbitrary group (Not implemented yet)

• Utilizing favorites ($HOME/.printers) on OpenSolaris LP print system
Integration of Groups to GTK+ Print Dialog

![GTK+ Print Dialog](image)

**Save as Search Group:** specific group

**Show printers that match:**
- **Name** contains p
- **Description** is not bad
- **Manufacturer** contains hp
- **Model** does not contain 5100
- **URI** contains ipp://
- **Media-Supported** contains A4
- **State** is Ready
Road map

- Local USB auto-detection and creation of queue – Nevada 69
- SNMP network device printer discovery – Nevada 77
- OpenSolaris Print Manager – Nevada 96/97, OpenSolaris 2008.11
- More Network printer discovery modules – MDNS, Samba
- CUPS support in OpenSolaris Print Manager?
- GTK+ Print Dialog for Groups
Thanks

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