IPP Working Group Session

October 4, 2011

Cupertino, CA

PWG F2F Meeting

IPP WG Meeting Agenda

Tuesday, October 4

1:00 - 1:10	Introductions, Minute Taker, Agenda Review
1:10 - 1:20	Current IPP WG status
1:20 - 2:00	Interoperability Testing Demo w/CUPS ipptool
2:00 - 2:45	MFD Alerts
2:45 - 3:00	Break
3:00 - 3:30	Images, Impressions, and Sheets, Oh My!
3:30 - 4:45	IPP Everywhere 1.0
4:45 - 5:00	Next Steps

IPP WG Officers

- **IPP WG Co-Chairs:**
  - Paul Tykodi (TCS)
  - Ira McDonald (High North)

- **IPP WG Secretary:**
  - Michael Sweet (Apple)

- **IPP WG Document Editors:**
  - Ira McDonald (High North) – IPP Version 2.0, IPP Everywhere 1.0, IPP JPS3, IPP Scan, IPP over HTTPS Transport Binding and "ipps" URI Scheme, LDAP Schema for Printer Services v2, PWG Character Repertoire Supported Registration
  - Michael Sweet (Apple) – IPP Version 2.0, IPP Everywhere 1.0, IPP JPS3, PWG Media Standardized Names, PWG Raster, IPP over HTTPS Transport Binding and "ipps" URI Scheme, LDAP Schema for Printer Services v2, IPP FaxOut Service

IPP WG Status

- Several IPP Everywhere specs in development:
  - IPP Everywhere 1.0 (EVEPRT)
  - IPP: Job and Printer Extensions - Set 3 (JPS3)
  - IETF IPP over HTTPS Transport Binding and "ipps" URI Scheme
  - IETF LDAP Schema for Printer Services v2
  - PWG Media Standardized Names 2.0 (MSN2)
  - PWG Raster
  - IPP Scan Service
  - IPP FaxOut Service
- Up-to-date pending IANA registrations online:
  - http://www.pwg.org/ipp/ipp-registrations.xml (+ .txt)
  - Will maintain this in parallel for new specifications
  - Also have some MIB registrations pending
- Need minor charter update for MSN2 and title tweaks

IPP Interoperability Event

- During the August 2011 F2F we decided the IPP/2.0 interoperability event will be virtual using the CUPS ipptool program and conformance test files
- October 5, 2011 release of ipptool covers:
  - All required operations and attributes for IPP/2.0
  - Partial coverage of operations and attributes for IPP/2.1
  - Basic testing for existence of IPP/2.2 operations and attributes
- Future update to include tests for undefined attribute and group tags, plus additions to IPP/2.1 and IPP/2.2 tests
- Test results to be sent to Mike Sweet (msweet@apple.com) for presentation at Februrary 2012 F2F
  - May provide preliminary results at December 2011 F2F

Where to Get CUPS ipptool

- http://www.cups.org/software.php
- Binaries available for Linux, Mac OS X, and Windows
- See the file "IPPTOOL.txt" for instructions on running the conformance tests
- Additional documentation in man-ipptool.html and man-ipptoolfile.html

IPP Interoperability Demo

w/CUPS ipptool

Common IPP Issues

- Input validation issues:
  - Not checking version number, request ID, presence and order of initial attributes and attribute groups
- Job history issues:
  - Many printers do not maintain a job history at all
- Operation issues:
  - Not returning required attributes
  - Returning hard errors for unknown attributes or value tags
- URI issues:
  - Not using or supporting "ipp" URI scheme (!)
- HTTP issues (increasingly rare):
  - Missing chunking support
  - Using HTTP/1.0

MFD Alerts

- Current draft at:
  - ftp://ftp.pwg.org/pub/pwg/pmp/wd/wd-pmpmfdalerts10-20110902.pdf
- Issues:
  - Do the security keywords belong here?
    - Syslog MIB can already expose the events logged via IDS Common Log Format spec
  - Add descriptions for the alert keywords?
    - This is especially important for the security keywords
    - RFC 2911 provides definitions for them, PSX spec does not

Images, Impressions, and Sheets, Oh My!

- ISO DPA, IPP, Job MIB, and Counter specs have slightly different definitions of pages, images, impressions, and sheets

- Need to reconcile these definitions - affects IPP Everywhere and progress reporting

ISO DPA Definitions

- Pages-completed
- Impressions-completed
- Media-sheets-completed
  - The number of source pages, impressions and sheets of media may differ. The following examples illustrate how they may differ when attributes, rather than the document contents, control the printing. If number-up is 0 or 1, there is one source page per impression, and if number-up is 2, there are two source pages per impression. If sides is 1, there is one impression per sheet of media, but if sides is 2, there are two impressions per sheet of media. By inference, if number-up is 4 and sides is 2, there are 4 source pages per impression and 8 source pages per sheet of media.

ISO DPA Definitions (con't)

- "page":
  - A page image or a physical page, depending on where the page is in the printing cycle. This general term is used where it is neither required not desired to distinguish between the two more specific page forms.

- "page image": (impression???)
  - Image data that has been formatted for placement on a physical page; this term is generally applied to the electronic representation of a page.

- "physical page":
  - One side of a leaf of a book, document, etc. This term is distinguished from the term physical medium by the fact that the physical page bears an image that has been rendered upon it, or it is identified in some other manner as a product of the printing process.

ISO DPA Definitions (con't)

- "sheet":
  - One instance of a medium, which may have either one or two imageable surfaces.

- "medium":
  - The material or surface upon which a document is rendered in visible form by a presentation device; alternately, a logical representation of such a material or surface. Examples include paper and the display screens of video display terminals. See logical medium and physical medium.

- "physical medium":
  - A data object that represents a particular physical instance or realization of a medium.

IPP Definitions

- Two attributes:
  - job-impressions-completed
  - job-media-sheets-completed

- Only "impression" is defined in RFC 2911:
  - 12.2.5 impression: An "impression" is the image (possibly many print-stream pages in different configurations) imposed onto a single media page.

- "Impression" is redefined in PWG 5100.3:
  - 2.3 Number-up and Imposition: Impression - The single image on one side of a sheet, i.e. all the marks that are imaged on one side of a sheet. See the middle part of each of the figures in this section. When the printing process does not include Imposition, an Impression is the same as a Finished-Page Image (see Figure 1). When the printing process includes Imposition, an Impression contains multiple Finished-Page images (see Figure 2, Figure 3, Figure 4, and Figure 5).

IPP Definitions (con't)

- Section 4 of RFC 3381 (IPP: Job Progress Attributes) does not provide a definition of impressions or sheets, and the examples do not cover number-up or sides handling

MIB Definitions

- RFC 2707 (Job Monitoring MIB):
  - "Impression": For a print job, an impression is the passage of the entire side of a sheet by the marker, whether or not any marks are made and independent of the number of passes that the side makes past the marker. Thus a four pass color process counts as a single impression, as does highlight color. Impression counters count all kinds: monochrome, highlight color, and full process color, while full color counters only count full color impressions, and high light color counters only count high light color impressions.

    One-sided processing involves one impression per sheet. Two-sided processing involves two impressions per sheet. If a two-sided document has an odd number of pages, the last sheet still counts as two impressions, if that sheet makes two passes through the marker or the marker marks on both sides of a sheet in a single pass. Two-up printing is the placement of two logical pages on one side of a sheet and so is still a single impression. See "page" and "sheet".

MIB Definitions

- RFC 2707 (Job Monitoring MIB):
  - "Page": A page is a logical division of the original source document. Number up is the imposition of more than one page on a single side of a sheet. See "impression" and "sheet" and "two-up".
  - "Sheet": A sheet is a single instance of a medium, whether printing on one or both sides of the medium. See "impression" and "page".
  - jmJobImpressionsCompleted: The total number of impressions completed for this job so far. For printing devices, the impressions completed includes interpreting, marking, and stacking the output. For other types of job services, the number of impressions completed includes the number of impressions processed.

System Counter Spec (5106.1)

- "Image":
  - A digital representation of a virtual media sheet side.

- "Impression":
  - An Impression is the content imposed upon a one side of a Media Sheet by a marking engine, independent of the number of times that the sheet side passes any marker. An Impression may contain more than one logical page. See Number-up.

- "Page":
  - A page is a logical division of an original source document.

- "Sheet":
  - A media sheet is a single instance of a medium, whether printing on one or both sides of the medium. See Impression and Page.

IPP Everywhere 1.0

- Current draft at:
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve10-20110927-rev.pdf
- Abstract:
  - This standard defines an extension of IPP to support network printing without vendor-specific driver software, including the transport, various discovery protocols, and standard document formats.
- Issues:
  - Need to finish up LDAP, SLP, and SSDP/UPNP stuff
    - Missing ipp-extensions-supported, multiple-document-handling, printer-charge-info-uri
    - Redundant organization attributes?
  - Require MSN2 now or wait for 2.0?

LDAP: Schema for Printer Services v2

- Initial draft at:
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/draft-mcdonald-ldap-printer-schema-00-20111002.pdf
- Updates RFC 3721 with new IPP Everywhere attributes

IPP WG Next Steps

- IPP 2.0/2.1/2.2 Interoperability Testing
  - Virtual interoperability event through February 2012 F2F
  - Preliminary results at December 2011 F2F if we have enough participation
- IPP Everywhere 1.0
  - Finish prototype draft specifications in Q4 2011/Q1 2012
  - Interoperability event for IPP Everywhere 1.0 in Q2 2012
- IPP Everywhere 2.0
  - Interim working drafts of IPP Scan Service and IPP FaxOut Service in Q4 2011/Q1 2012

IPP WG Info / Participation

- We welcome participation from all interested parties
- IPP Working Group web page
  - http://www.pwg.org/ipp/index.html
- IPP Working Group wiki
  - http://pwg-wiki.wikispaces.com/IPP
- Subscribe to the IPP mailing list
  - http://www.pwg.org/mailhelp.html
- IPP WG holds bi-weekly phone conferences announced on the IPP mailing list
  - Next conference call is October 17, 2011 at 1pm (EST)

Backup Slides

IPP WG Document Status

- IPP: Job and Printer Extensions - Set 3 (JPS3)
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippjobprinterext3_v10-20110929.pdf
  - Update posted, will review in concalls
- IETF IPP over HTTPS Transport Binding and "ipps" URI Scheme
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/draft-mcdonald-ipps-uri-scheme-03-20110826.txt
  - Ready for submission to IETF AD
- IETF LDAP Schema for Printer Services v2
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/draft-mcdonald-ldap-printer-schema-00-20111002.pdf
  - Initial draft

IPP WG Document Status

- PWG Raster
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippraster10-20110730-rev.pdf
  - Prototype draft to be posted Real Soon Now
- PWG Media Standardized Names 2.0
  - ftp://ftp.pwg.org/pub/pwg/general/wd/wd-pwgmsn20-20110802.pdf
  - Update in progress
- IPP Everywhere 1.0
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve10-20110927.pdf
  - Reviewing update later today
- IPP Scan Service
  - ftp://ftp.pwg.org//pub/pwg/ipp/wd/wd-ippscan-20110404.pdf
  - Initial draft posted, awaiting WG review

IPP WG Document Status

- **IPP System Control Service**
  - TBD

- **IPP FaxIn Service**
  - TBD

- **IPP FaxOut Service**
  - ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippfaxout10-20110922.pdf
  - Initial draft just posted based on approved SM FaxOut spec

- **IPP Everywhere 2.0**
  - TBD