

IPP Working Group Session

5 August 2010

Bagsværd, Denmark - PWG F2F Meeting

IPP WG Meeting Agenda



12:30 - 12:45	Introductions, Minute Taker, Agenda Review
12:45 - 1:00	Current IPP WG status
1:00 - 1:30	Discuss Job and Printer Set 2 PWG Last Call
1:30 - 2:30	Discuss IPP/2.0 Second Edition
2:30 - 2:45	Break
2:45 - 4:30	Discuss IPP Everywhere Requirements & Use Cases
4:30 - 4:45	Break
4:45 - 6:15	Discuss Attributes, Protocols, and Formats
6:15 - 6:30	Action Items and Next Steps

IPP WG Officers



- IPP WG Chair:
 - Paul Tykodi (TCS)
- IPP WG Secretary:
 - Michael Sweet (Apple)
- IPP WG Document Editors:
 - Tom Hastings (retired Xerox) – IPP JPS2
 - Ira McDonald (High North) – IPP Version 2.0
 - Michael Sweet (Apple) – IPP Version 2.0

IPP WG Current Status



- IPP Version 2.0 First Edition
 - PWG Candidate Standard – defines IPP/2.0 and IPP/2.1
 - <ftp://ftp.pwg.org/pub/pwg/candidates/cs-ipp20-20090731-5100.10.pdf>
- IPP Printer State Extensions (PSX)
 - PWG Candidate Standard – IPP Printer/Finisher alerts
 - <ftp://ftp.pwg.org/pub/pwg/candidates/cs-ippstate10-20090731-5100.9.pdf>

IPP WG Current Status



- IPP Job and Printer Operations Set2 (JPS2)
 - PWG last call
 - <ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippjobprinterext10-v31-2010MMDD-clean.pdf>
- IPP Version 2.0 Project Charter
 - PWG SC Approved – adds IPP Job and Printer Operations Set2
 - <ftp://ftp.pwg.org/pub/pwg/ipp/charter/ch-ippv2-20090819.pdf>
- IPP/2.0 SE
 - Draft posted
 - <ftp://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipp20-20100718-rev.pdf>
- IPP Everywhere Project Charter
 - PWG SC Approved
 - <ftp://ftp.pwg.org/pub/pwg/ipp/charter/ch-ippeverywhere-charter-20100712.pdf>

IPP JPS2 Status



- Now in PWG Last Call
- Comments:
 - The document date is wrong in the headers. *RESOLVED*
 - The "font-size-requested" attribute uses points as the units, however it should probably use a higher-precision unit... *REJECTED due to existing implementations*
 - Do we need the PWG process reference at the beginning of section 3? Do we need to explain why we organize our standards documents this way? *YES, but updated wording*
 - On line 372 of the -rev document you say "these features are useful in the "light production printing" environments, but we don't define what "light production printing" is, just "production printing". *RESOLVED by removing production printing references*

IPP JPS2 Status



- Comments (con't):
 - Line 427 - I think Close-Job is Owner + Operator, per RFC 2911's description of Send-Document and the Close-Job references in JPS2... *RESOLVED by adding access rights text*
 - Line 567-568: The definition says up to 255 characters for job-password and job-password-supported, but here we say 127 octets. *RESOLVED*
 - Section 10.5 (job-spooling-supported) - shouldn't this be a 1setOf? *REJECTED but included some wording changes*

IPP/2.0 SE Status



- Fixed typos, editorial issues, and missing references
- Revised section 4 to add new Table 1 (summary of all IPP spec requirements)
- Revised section 4.3 IPP/2.2 to add missing TLS/1.2 [RFC5246] (per section 10)
- Revised section 5.2 IPP/2.0 to correct note on Resubmit-Job

IPP/2.0 SE Status



- Revised tables and notes in section 6:
 - Added target object of all special operation and response attributes
 - Added ISSUE about "status-code" and other non-attribute parameters
 - Added "status-message" as RECOMMENDED in IPP/2.0 and IPP/2.1
 - Added that "media-ready" or "media-col-ready" are explicitly OPTIONAL

IPP Everywhere Status



- Approved with 12 yes votes, 1 no (without strong objection), and 2 abstains.
- Work to begin today on IPP Everywhere Requirements

CUPS ipptool



- <http://www.cups.org/software.php>
- IPP/1.1, IPP/2.0, and IPP/2.1 conformance tests
- Binaries available for Linux, Mac OS X, and Windows
- Thousands of downloads since April
- New features coming soon in August release:
 - “Continue past errors” mode
 - Conditional tests based on success/failure of previous test

CUPS ipptool



- Simple text-based test files:

```
{  
  NAME "Name of test"  
  OPERATION Get-Printer-Attributes  
  GROUP operation-attributes-tag  
  ATTR charset attributes-charset "utf-8"  
  ATTR naturalLanguage attributes-natural-language "en"  
  ATTR uri printer-uri "$uri"  
  STATUS successful-ok  
  EXPECT printer-uri-supported OF-TYPE uri  
}
```

IPP Everywhere

IPP Everywhere Use Cases



- Clients
 - Mobile device
 - Notebook computer
 - Desktop computer
 - Cloud applications
 - No printer/vendor-specific drivers
- Printers
 - Low-cost personal inkjet/laser
 - Mid-range workgroup inkjet/laser
 - High-end enterprise inkjet/laser

IPP Everywhere Requirements



- Discovery Protocol
 - LAN and WAN discovery
 - Wi-Fi compatible
 - Must not depend on managed infrastructure, but should take advantage of it
- Transport Protocol
 - HTTP and IPP for baseline implementation
 - Should not preclude other transport mappings
- Attributes
 - Require existing job template attributes
 - New attributes for geolocation, supply monitoring, etc.
- Document Formats
 - Require support for raster format(s)
 - Make support for vector format(s) optional

IPP Everywhere Protocols



- Bonjour for discovery
 - DNS-SD + Multicast DNS + IPv4 link local
 - Works for IPv4 and IPv6
 - Works for local, unmanaged networks as well as managed and WAN configurations
- IPP/2.0 + HTTP/1.1 for transport

IPP Everywhere Attributes



- New printer and job UUID attributes
 - CUPS already has "job-uuid (uri)"
- Expose 1284 device ID: "printer-device-id (text)"?
- Expose geolocation information based on RFC 1876
- Expose Printer MIB OIDs as IPP attributes such as CUPS Marker Attributes
- Provide icon(s) representing the printer in standard format (PNG), e.g. "printer-icons (1setOf uri)"?
- Color: rendering intent for out-of-gamut colors, device ICC color profile(s) for soft proofing
- "output-mode (type2 keyword)" to pick between color and monochrome?

IPP Everywhere Attributes



- Additional finishings enums for roll-fed printers: trim-after-pages, trim-after-documents, trim-after-job
- Additional media-col member attributes:
 - media-bottom-margin (integer), media-left-margin (integer), media-right-margin (integer), media-top-margin (integer) to provide document margins (printer can choose proper mode to satisfy)
 - media-source (type3 keyword) to specify the input source/tray
 - Media size, type, source, and margins often go together, but should these be first-class attributes?
 - Also media-*-supported first-class attributes to list supported values?

IPP Everywhere Attributes



- PWG 5100.6: Page Overrides
- PWG 5100.11: Job and Printer Operations Set 2 (for media-col-database)

IPP Everywhere Document Formats



- CUPS Raster
 - Version 2 format provides packbits (run-length) compression
 - IPP's compression attribute would allow for additional compression algorithms
 - Very low overhead on client and server
- JPEG
 - Common photo format from cameras and phones
 - Often supported in printers for PictBridge support
 - Not good for text, image size limits
- PDF
 - Best potential quality of the three, but does not stream easily and the printer usually has to store a local copy before printing
 - What version?
 - What size files?

IPP WG Next Steps

- IPP Job and Printer Operations Set2 (JPS2)
 - PWG Last Call
- IPP Version 2.0 Second Edition
 - Review and update drafts
 - PWG Last Call in Q3 2010
- IPP 2.0/2.1/2.2 Interoperability Testing
 - Interoperability event in Q3/Q4 2010
- IPP Everywhere
 - Requirements in Q3 2010
 - Initial draft specification in Q4 2010
 - PWG Last Call of Requirements in Q1 2011
 - Prototype draft specification in Q2 2011
 - Interoperability in Q3 2011

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