

Internet Printing Protocol Meeting Minutes

November 15-17, 2022

Meeting was called to order at 11am EST on November 15, 10am EST on November 16, and 12:45pm EST on November 17.

Attendees

Taiki Arai (Okidata)
Benjamin Gordon (Google - ChromeOS)
Smith Kennedy (HP)
Jeremy Leber (Lexmark)
Ira McDonald (High North)
Piotr Pawliczek (Google - ChromeOS)
Michael Rhines (Qualcomm)
Anthony Suarez (Kyocera)
Michael Sweet (Lakeside Robotics)
Paul Tykodi (TCS)
Bill Wagner (TIC)
Uli Wehner (Ricoh)
Steven Young (Canon)

Agenda Items

1. Antitrust and IP policies, minute taker
 - https://www.pwg.org/chair/membership_docs/pwg-ip-policy.pdf
 - https://www.pwg.org/chair/membership_docs/pwg-antitrust-policy.pdf
 - Antitrust and IP policies accepted, Mike taking minutes
2. Status
 - <https://ftp.pwg.org/pub/pwg/ipp/slides/ipp-wg-agenda-november-22.pdf>
 - EPX 2.0 partially prototyped
 - JOBEXT 2.1 prototyped already (nothing new is required, just an errata update)
3. IPP Job Extensions v2.1 (JOBEXT)
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippjobext21-20221105-rev.pdf>
 - Consensus is to add max-page-ranges-supported
 - Section 4.4:
 - Missing section reference for job-processing-time
 - Q: What about an xxx-supported attribute?
 - A: None needed for status attributes - if present, they are supported
 - Consensus is not to say something about this in the job-processing-time description (if not returned, a Client can calculate it) since there isn't much benefit
 - Q: Who would be using this and how would they discovery it?

- A: Probably need to make a note of it when we announce the new version of the document
- Also include in an updated Job Accounting best practice
- Action: Mike to add an errata issue about job-processing-time for Job Accounting BP
- Section 6.3.1:
 - "Processing includes Document transforms, storage, transmission, and/or printing on the Output Device(s)."
- Section 17.1:
 - Update Unicode references
 - Add job-pages, job-pages-completed from NODRIVER
 - Add job-{impressions,media,pages}[-completed]-col from registry
 - Next status stable
 - Action: Mike to start IPP WG last call of JOBEXT ending December 7, 2022
- 4. Internet Printing Protocol/2.x: Fourth Edition
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippbase23-20220809-rev.pdf>
 - No updates
- 5. IPP Everywhere v2.0
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve20-20221107-rev.pdf>
 - Q: Is Paid Imaging Service another feature/class to test for?
 - A: Yes
 - Q: What about IPP-USB - how do we certify it?
 - Mike: Probably want to say something about it in the self-cert manual, maybe add a check box for the printer list?
 - Smith: No formal certification tests from USB-IF
 - Ira: Would it be useful to see IPP-USB-capable printers?
 - Mike: Any IPP printer since about 2013 will have IPP-USB support unless USB isn't used for printing (big iron)
 - Smith: Might be useful to show/filter on interfaces - Ethernet, Wi-Fi, USB
 - Section 3.1: Need EPX reference
 - Section 5.1: Drop "the" in front of "TLS/1.2"
 - Sections 5.3.1, 5.3.2, 5.3.3, 5.3.4: Drop if all of this is now in JOBEXT 2.1
 - Global: Paid Imaging or Paid Print: be consistent
- 6. IPP Everywhere Printer Self-Certification Manual v2.0
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeveselfcert20-20220510-rev.pdf>
 - Tests:
 - Long-edge feed vs. orientation testing? Should be doing that now for the basic PWG Raster document tests (since we are generating data)
 - Hard to automate orientation tests - how to instruct tester of the proper output?
 - Might be able to do simple "is it landscape/portrait" for printing an image
 - Envelope printing for media-feed-orientation testing
 - Borderless for photos

- Enterprise features?
 - Defer most to 2.1+, but maybe job-password for 2.0?
 - Page overrides?
 - GUI:
 - Should submission be hidden until all tests are done?
 - Still working on workflow/UI
 - Initial screen: list name, IPP and HTTP URIs, all clickable/copyable in grid/data table
7. IPP Production Printing Extensions v2.0 (PPX)
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippppx20-20221109-rev.pdf>
 - Section 2.2: Check Job definition - import from STD92???
 - Section 5.2.5 (and elsewhere):
 - The Client supplies either the "media" or "media-col" member attribute. A Printer receiving a request that contains both member attributes MUST reject the request, return the 'client-error-conflicting-attributes' status code, and return the "insert-sheet" attribute in the unsupported attributes group.
 - SK17: Global: Change to add "Printer" to all conformance columns in tables
 - SK18: Global: Put values in boldface
 - Action: Mike to update template to include Printer Conformance and boldface value examples for list paragraph
 - SK22: Move job-sheet-message to JOBEXT 2.1
 - Section 5.2.14: Drop "instead of this attribute" on the end
 - Section 5.3: Add page break, table reference
 - Mike will post updated LCRC drafts
 - Action: Mike to start PWG Formal Vote of PPX starting on Jan 3, ending Jan 31, 2023
8. IPP Driver Replacement Extensions v2.0 (NODRIVER)
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippnodriver20-20221027.pdf>
 - printer-firmware-xxx:
 - RECOMMENDED for -name, CONDITIONALLY REQUIRED for others
 - Table 22: add note explaining the CONDITIONALLY REQUIRED
 - Fix -patches, -version, and -string-version to show CONDITIONALLY REQUIRED, second sentence states the condition
 - Q: Do we want to add printer-asset-tag, printer-cover, printer-cover-description, and printer-serial-number.
 - A: Consensus is yes, add as RECOMMENDED (CONDITIONALLY REQUIRED for printer-cover-description)
 - Table 22: Update to agree with sections (printer-uuid is REQUIRED, for example)
 - Global: Check attribute summary tables - verify the conformance is correct.
 - Remove job-pages, job-pages-completed (moving to JOBEXT 2.1)
9. Evolution of IPP and OAuth

- Local trust model diagram:
 - "Devil in the details" - how validation is done, domain names, etc.
 - Look at possible abbreviations/acronyms
- Cloud trust model diagram:
 - Proxy might also need to talk to AS (depending on configuration) for initial provisioning, release printing, for authorization to fetch jobs, etc.
 - Break up into three copies: provisioning, submission, and printing
- RAR:
 - <https://datatracker.ietf.org/doc/draft-ietf-oauth-rar>
 - https://ftp.pwg.org/pub/pwg/ipp/whitepaper/google-authorization_details-20221111.pdf
 - Mike: I like option 1 better - simpler
 - Smith: But option 1 doesn't support SSO for multiple printers
 - Mike: Also not sure about passing access level to AS, since Printer is the one determining access level and returning client-error-not-authorized
 - Ira: IDS did some good work on defining policies (who can do what)
 - <https://ftp.pwg.org/pub/pwg/ids/wd/wd-ids-iaa10-current.pdf>
 - <https://ftp.pwg.org/pub/pwg/ids/wd/wd-ids-model10-current.pdf>
 - Smith: So we don't need access level?
 - Mike: Right, maybe something more specific (operations?) but how much do we expose?
 - Mike: SAML/XACML and CUPS ACL policies were all talked about:
 - <https://wiki.oasis-open.org/security/FrontPage>
 - https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=xacml
 - <https://openprinting.github.io/cups/doc/man-cupsd.conf.html>
 - <https://openprinting.github.io/cups/doc/policies.html>
 - Smith: If no access levels, then how is this better than just scopes?
 - Piotr: This can be extended, while scopes is just the one string
 - How does the policy get into the printer? Does AS know about policy?
 - Lots of different vendor-specific protocols
 - AS doesn't generally implement policy - focus is on authorization and identity
 - Smith: What about Printer doing introspection vs. knowing it is JWT?
 - Also Client knowing which groups/scopes it got?
 - Piotr: AS returns success and token if at least one group/scope is authorized

- Client/Printer need to introspect or decode JWT to see list of authorized groups/scopes
 - Smith: Does the Client ask the End User which scopes/groups to request?
 - Piotr: No, Clients asks for all of them, gets whatever they are authorized for
 - Continue RAR/authorization_details and policy schema discussions at next concall
 - Piotr: "Binary" access policy, how to know whether access token has identity information, "standard" access policy, etc.
10. 3D Printing
- American Concrete Institute (ACI):
 - Having some difficulties setting up a presentation
 - Hoping to use TRB conference in May 2023 to present PWG Safe G-Code to the ACI members
 - America Makes & ANSI Additive Manufacturing Standardization Collaborative (AMSC):
 - Looking at further collaboration with 3MF Consortium and other workgroups
 - Version 3 of the "roadmap" document scheduled for release in June 2023
 - Paul is monitoring what other groups are doing and what the identified gaps are, and where those match up with the PWG's work
 - INCITS liaison is changing
 - Paul is an individual member of the new expert group replacing it

Next Steps / Open Actions

- Next conference calls on December 8, 2022 and January 5, 2023 at 3pm
- Action: Mike to add an errata issue about job-processing-time for Job Accounting BP
- Action: Mike to start IPP WG last call of JOBEXT ending December 7, 2022
- Action: Mike to update template to include Printer Conformance and boldface value examples for list paragraph
- Action: Mike to start PWG Formal Vote of PPX starting on Jan 3, ending Jan 31, 2023
- Action: Mike to send updated IANA IPP registry deprecating duplicated media sizes (PENDING)