

Internet Printing Protocol Meeting Minutes

August 18-20, 2020

Meeting was called to order at approximately 11:15am EDT on August 28, .

Attendees

Amitha (Konica Minolta)
Aveek Basu (Open Printing/Lexmark)
Gyaneshwar Gupta (Oki Data)
Hiroki Ikari (Konica Minolta)
Sean Kau (Google)
Smith Kennedy (HP)
Jeremy Leber (Lexmark)
Ira McDonald (High North)
Marc Mulders (Konica Minolta)
Rakesh Pandit (Open Printing?)
Michael Rhines (Qualcomm)
Anthony Suarez (Kyocera Document Solutions)
Alan Sukert
Michael Sweet (Lakeside Robotics)
Paul Tykodi (TCS)
Bill Wagner (TIC)
Uli Wehner (Ricoh)
Steven Young (Canon)

Agenda Items

1. IP Policy and Minute Taker
 - https://www.pwg.org/chair/membership_docs/pwg-ip-policy.pdf
 - IP policy accepted, Mike taking minutes
2. IPP Status
 - <https://ftp.pwg.org/pub/pwg/ipp/slides/ipp-wg-agenda-august-20.pdf>
 - IPP Everywhere Value Prop
 - Also good for CI
3. IPP INFRA and Cloud Proxy Registration
 - Smith: Could still be in-band for Proxy to Infrastructure Printer, perhaps with manual review by a person
 - Mike: Could force HTTP authentication the first time and then remember the cert as a sort of Trust On First Use policy (but has security implications)
 - Smith: Similar to SSH allowing passwords for a show period of time until certificates can be installed
 - Potentially hundreds of output devices (for things like release printing)
 - Ira: Might have other metadata that would be useful to report in output

- device collection
 - Need to make sure that definition of "output-device-database" has the same number of values and lth value stuff
4. Job Accounting with IPP v1.0
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippaccounting10-20200817-rev.pdf>
 - Section 4.7:
 - Talk about user identity information is carried with any jobs that are created and retained just as for a normal End User's print jobs
 - The access is temporary, but accounting information retention is the same as for any user or job
 - Next status: Stable, move to IPP WG Last Call
 - Action: Mike to publish stable draft of Job Accounting and start two-week IPP WG Last Call
5. IPP Everywhere Value Proposition
- Action: Smith to post Github issue against ippeveselfcert to support CI usage (DONE)
 - Mike: Important to note that IPP Everywhere makes direct printing from Chrome OS possible
 - Need to effectively communicate the technical benefits of IPP Everywhere; marketing/business issues are the domain of the various members
 - For end-users, IPP Everywhere awareness only needs to extend as far as "this will work with my computer", but they don't know why and it doesn't get "badged" like it would for AirPrint or Mopria printers might (no "I've found an IPP Everywhere printer, do you want to use it" kinds of messaging)
 - Marc: Might have an opportunity to market IPP Everywhere as the replacement for Google Cloud Print?
 - Smith: Will investigate this idea further in the steering committee
 - Ira: Can also use Anne Price for the marketing side of things...
 - Smith: Can we add something to CUPS or the Linux GUIs?
 - Mike: Already add "- IPP Everywhere" to the end of the make and mode on the CUPS side of things
 - Michael: Like the idea of adding fuzzing/security testing
 - Smith: What about IPP Privacy Attributes?
 - Mike: They were added in 1.1 as recommended, along with a bunch of other things
 - Summary/Highlights:
 - Market IPP Everywhere as a replacement for Google Cloud Print for ChromeOS
 - Market IPP Everywhere as a development/QA tool
 - Market IPP Everywhere 1.1 for its enhanced focus on security/privacy
 - Investigate adding fuzzing/security testing to tools
6. IPP Encrypted Jobs and Documents v1.0
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipptrustnoone10-20200128.pdf>
 - HP is working on prototyping this specification
 - 3MF has done an encrypted container for their format as well

- https://github.com/3MFConsortium/spec_slice/releases/download/1.0.2/3MF_Slice_Extension_v1_0_2.pdf
- 7. IPP Enterprise Printing Extensions v2.0
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippepx20-20200815-rev.pdf>
 - Global: Rename "Control Console" to "Console"
 - Section 2.2:
 - Look up reference for Console (certainly RFC 3805, maybe others?)
 - Use STD92 for Administrator and Operator
 - "Password Release Job": A Job that has a permanently attached password. ... the new copy preserves the original password to preserve the authorization requirement.
 - "PIN Printing": A Password Release Job that uses a numerical password ("PIN").
 - Section 4.1:
 - "An IPP Client uses the Job Release feature to request ..."
 - "A Client can request Job Release by including ..."
 - Section 4.2:
 - "An IPP Client uses the Job Storage feature to request ..."
 - Move xxx-supported into second paragraph (like in 4.1)
 - "A Client can request Job Storage by supplying ..."
 - Section 4.2.1:
 - "Stored Jobs"
 - Lines 610-511: "which is longer than ..."
 - Section 4.2.2:
 - "Find and Evaluate a Stored Job"
 - Section 4.2.3:
 - "Print a Stored Job"
 - "to print a copy"
 - "Stored Job" (not "Saved Job")
 - "direct interaction with the Console"
 - Lines 594-595:
 - "An End User can request the Printer to print a Stored Job using its Console."
 - Line 596-597: Drop everything after "out of scope of this document."
 - Section 4.3:
 - Rewrite first sentence.
 - "most authenticated user"
 - Reword so that the Client requests printer attributes filtered by most authenticated user. Focus on difference from Get-Printer-Attributes is that GPA cannot be authenticated but GUPA *can* be authenticated.
 - Section 4.4:
 - "Job Proof"
 - Section 4.4.x:
 - Rewrite first sentences to match the other 4.x sections

- Just talk about what the features are, don't compare *except* to say why Job Proof Print is DEPRECATED
 - Section 6.2.4:
 - Line 858: "the Printer produces"
 - Line 864: "Once the Proof Copies have been produced, the Printer suspends the Job by moving it into the 'processing-stopped' state.
 - Then say the job returns to the 'processing' state when approved.
 - Move all talk of "copies" attribute and total copies to its own paragraph.
 - "The Client MUST specify a value for the "proof-copies" attribute that is less than the value for the "copies" attribute."
 - Sections 6.3.1, 6.3.2:
 - Drop these; job-password/-encryption are private values to the Job object
 - Section 14.1:
 - Line 1776: DEPRECATED (all caps)
 - Will resume at section 6 for the next review.
 - Pushing schedule to Q1 2021 for prototype draft.
8. IPP Production Printing Extensions v2.0
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippxxx20-20200817-rev.pdf>
 - Discussion concerning page scaling/positioning and sheet/roll-fed printing issues
 - <https://ftp.pwg.org/pub/pwg/ipp/slides/IPP-Input-Pages-Media-Sheets-and-Output-with-Cut-and-Roll-Media.pdf>
 - Output Page is roughly equivalent to a Media Sheet
 - Printer status (printer-input-tray/printer-output-tray record location/count of sheets)
 - Counters (job-media-sheets-completed[-col] and printer-media-sheets-completed[-col]) record processed output (and what was marked on them)
 - ipp-attribute-fidelity can also influence scaling
 - "print-scaling"='auto' and 'auto-fit' don't scale up, 'fit' and 'fill' will scale up
 - Makes sense to offer some positioning control in production environment
 - For roll fed media, 'iso_a4_210x297mm' would allow the printer to choose short (portrait) or long (landscape) edge output (using only 210mm or 297mm of the roll), while "roll_name_24x11.69in" would specify the full roll width and have the input pages imposed just as for a sheet
 - Instead of "roll-media-sheet-xxx" attributes use standard "imposition-template" values:
 - "position_H_V" for automatic rotation, "position_H_V_R" for specific rotation (0, 90, 180, 270 counter-clockwise)
 - H = left, center, right
 - V = top, middle, bottom
 - What are the expectations for roll-fed printers WRT what sizes to report?

- Some certification programs provide a list of standard sizes that must be reported (i.e. A0 and E for 36" roll printers)
 - Maybe also talk about mapping those sizes to a roll (and auto-rotation)?
 - Mike: Need to be careful about limiting roll content to production - lots of small consumer inkjets support rolls, as well as label printers, etc.
 - Jeremy: Probably better to be in a best practice document or implementor's guide
 - What about size of media-col-database?
 - Can optimize by omitting member attributes that can have any value, e.g. all media-type values are allowed for a given size
 - Mike will post updated draft with proposed "imposition-template" keywords
9. IPP Driverless Printing Extensions v2.0
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippnodriver20-20200204-rev.pdf>
 - "print-quality-col (collection)":
 - <https://github.com/istopwg/ippsample/wiki/IPP-Print-Quality-Discussion>
 - Might order print-quality-database values by percent then by localized name; can't guarantee ordering for two qualities with the same percent
 - print-quality-attributes-supported/hints-supported probably a non-starter - no Client implements UI based on a printer's list of attributes (no in the 15 years we've had job-creation-attributes-supported)
 - Much easier to get Clients to support scoped functionality - job-presets, finishing-template, and now print-quality-template
 - print-quality-col customization (either site-specific print-quality-template or custom print-quality-col values) is possible, just list finishings-col
 - Jeremy: Can custom member attributes be constrained (i.e. no nested collections)?
 - Smith: Had some of these in prior proposals/drafts WRT print-quality-hints-supported to limit what kinds of attributes need to be supported by generic UI
10. 3D HCD Protection Profile
- INCITS asked about standard for security certification for 3D printers
 - Paul asked Alan and Ira about this, could 2D HCD PP be adapted?
 - Yes, could define PP module for 3D printers
 - ISO 15408-1:2009 standard for security protection profiles
 - <https://www.iso.org/standard/50341.html>
 - Need to define threats for 2D and 3D, compare to see what the commonality is
 - Smith: Is there overlap between 2D and 3D printing countries?
 - HCD iTC sponsored by Japan and Korea
 - 28 countries involved in iTC, don't know what each country will say (position statements) about 3D printers

- Won't know until we get responses from each country
 - Bill: Will this happen after or concurrently with 2D PP, and would it interfere?
 - Alan: Won't interfere, maybe concurrently but definitely separate from 2D
 - Ira: Current list of 3D Printer manufacturers:
 - https://en.wikipedia.org/wiki/List_of_3D_printer_manufacturers
11. PDF standardization
- PDF/E is now deprecated, now just use PDF 2.0 with 3D content embedded
 - Concern is that not all PDF consumers will handle the 3D content properly
 - Important to protect metadata in PDF files so that it is not lost
 - Still not sure how PDF and IPP will interact in the end - use IPP just as transport, or as part of whole workflow?
 - Also, PDF 2.0 container now allows arbitrary kinds of 3D objects - that's how STEP-NC has been added
12. IPP 3D:
- Smith: Don't have any printers in the wild doing IPP 3D + 3MF
 - Will having a certification process for IPP 3D be useful?
 - What about a Client application to work with the ippserver support for 3D printers?
 - Mike: Certainly could, but not sure the larger standards orgs or vendors would pay attention/notice
 - Paul: Are there ways for us to encourage 3MF + PWG 3D Job Ticket, including support for layers
 - Maybe the 3MF can ask their membership if they are interested in a proof-of-concept project showing end-to-end printing working with 3MF and IPP?
 - Now that 3MF is part of the Linux Foundation we might be able to get something going
 - Bill: A lot of confusion over what a "printer" is in the 3D space...
13. Next steps:
- Push EPX to Q1 2021
 - Push DRIVERLESS to Q2 2021
 - Stable draft of Job Accounting with IPP v1.0 coming next
 - Discuss new imposition-template values for PPX
 - Bill: What are the plans for IPP 2.0/2.1/2.2 spec?
 - Ira: In 2021 we plan to update this spec to point to the new EPX and PPX
 - Mike: It will be "interesting" - probably focus on the major version, point to historical relation of 2.1 to EPX and 2.2 to DOBJECT+PPX
 - Ira: Can include some history in the updates to explain the transition away from explicit version numbers, but retain them for compatibility reasons

Next Steps / Open Actions

- Next conference calls August 27 and September 10, 2020 at 3pm
- Action: Mike to publish stable draft of Job Accounting and start two-week IPP WG Last Call
- Action: Smith to post Github issue against ippeveselfcert to support CI usage (DONE)
- Action: Ira to post a first draft of new IPP WG charter
- Action: Chris to file errata against 5100.9 concerning what to do about printer-alert when there are no alerts
- Action: Mike, Ira, and Smith to develop IPP Everywhere value proposition content
- Action: Cihan to post a summary of the Cloud/INFRA discussions to the IPP mailing list and start work on an IPP Registration document (PENDING)