

Internet Printing Protocol Meeting Minutes

November 3-5, 2020

Meeting was called to order at approximately 11:15am EST on November 3, 12:30pm EST on November 4, and 10:00am on November 5, 2020.

Attendees

Amitha (Konica Minolta)
Cihan Colakoglu
Hiroki Ikari (Konica Minolta)
Smith Kennedy (HP)
Jeremy Leber (Lexmark)
Ira McDonald (High North)
Marc Mulders (Konica Minolta)
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. Slides
 - <https://ftp.pwg.org/pub/pwg/ipp/slides/ipp-wg-agenda-november-20.pdf>
 -
3. Job Accounting with IPP v1.0
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippaccounting10-20200827.pdf>
 - Reached quorum, 41 comments
4. IPP INFRA Cloud Proxy Registration
 - Ira: ESI (German equivalent of US NIAP) says that 2048-bit RSA is disallowed starting in 2022 (same advice coming from post-quantum crypto groups)
 - Need to communicate certificate requirements to proxies (algorithms/bits/hashes/signing authority)
 - Mike: Other issue is why does MSUPS use both X.509 and OAuth for Proxy operations?
 - Smith: Maybe used as an alternate source of identity so MS doesn't have to share certs with third parties?!?

- Smith: Would be nice to do both Proxy-generated and System-generated X.509 certificates (self-signed and provisioned CA-signed certs are also possible)
 - Mike: Need to register a new uri-authentication-supported keyword ("tls+oauth") to match MSUPS
 - Smith will look up current Microsoft PWG contacts so we can try contacting them.
 - Action: Mike, Smith, and Cihan to draft a message to Microsoft concerning the Universal Print Service
 - Smith: Also need to talk about re-registration when X.509 cert expires
5. IPP Production Printing Extensions v2.0
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippppx20-20201029-rev.pdf>
 - Smith: Haven't forwarded the new keywords to internal engineers, will get feedback
6. IPP Everywhere Evolution
- Q: Should we require/recommend system service?
 - Mike: Most MFPs only have one IPP service (print), scan doesn't use IPP
 - Ira: What about FaxOut?
 - Most MFPs don't do PC fax anymore, legal documents typically sent via scan head
 - Smith: Should we require a subset?
 - Ira: Probably not a good idea
 - Single printer requirement could be satisfied with Get-Printer-Attributes to /
 - Mike: Could be a "best practice" to use /ipp/print but support Get-Printer-Attributes on / to report the printer-uri to use
 - Need further discussion about
 - Smith: date-time-at-xxx attributes in registry need to be updated
 - Smith: TLS 1.2 or later required
 - Mike: What about IPP Everywhere Enterprise/Production levels?
 - IPP 2.x will likely have a hard 2.0 requirement with recommendations for 2.1 and 2.2
 - Historically had issues getting 2.1/2.2 adoption
 - Smith: Might also want to define individual features and corresponding tests
 - Have gotten requests for feature-specific testing
 - Need to determine what is the barrier to implementing those things today?
 - Two areas of focus:
 - Different classes of printers and standard extensions for each class
 - Clients that can support the full range of features/authentication/etc. expected for different classes of printers
 - IPP System service:
 - Maybe required for an IPP Everywhere Server/Managed/etc. level
 - Clients would need to support System operations (Get-Printers, etc.)

- Next step: Sketch and discuss IPP 2.0 and IPP Everywhere 2.0 plans on the mailing list
 - Action: Mike to post a summary of IPP 2.0 and IPP Everywhere 2.0 plans to the IPP mailing list
7. IPP Enterprise Printing Extensions
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippepx20-20201029-rev.pdf>
 - Figure 3: Fix title to match proper section number
 - Section 4.4.1: Clean up - move "await approval or rejection" to end of sentence?
 - Section 5.1.1: "and the Printer MUST support", fix requested-attributes to use the non-passive form used everywhere else
 - Global: Replace 5100.SYSTEM with 5100.22
 - Global: Tables should say "Printer Conformance" (not support)
 - Global: look for broken section 0 references (all for job-password-encryption?)
 - Global: make sure tables that define keywords don't use conformance language (use declarative language) - Table 3 and others
 - Section 6.1.3:
 - Lines 777 and 780: Use "set", not "initialize"
 - Reword lines 778-780 - long, passive sentence
 - Job Release support should require spooling support in printer. Otherwise a client cannot de-spool multiple jobs.
 - In the Cloud/Pull printing scenario, the intermediate server does the spooling and then the proxy handles releasing and fetching the job(s)
 - Add some discussion of Job Release with INFRA to section 4.1
 - Add back reference to 4.1 for cloud scenarios
 - Action: Smith to post question about restricting Release Printing to spooling printers to the IPP list - should we attempt to support Releasing Printing for streaming printers?
 - Section 6.2.4:
 - Drop ", indicating this Job is a ..." trailer on first sentence.
 - Section 6.2.5:
 - Table 7: "Client Request" for column 2
 - Section 6.2.5.x:
 - Remove "requested" from the first sentences
 - Section 6.3.2:
 - Drop "indicates this Job is a Stored Job"
 - Delete "Job Status" from last sentence
 - Section 6.3.3/6.3.4:
 - Add reference to PWG5100.7 for Resubmit-Job operation
 - Section 6.4.x:
 - Drop "if a client omits it" language from all xxx-default attributes
 - Section 6.4.3:
 - name syntax is now OBSOLETE
 - Remove sentence about future deprecation

- Add ISO 10118-3:2018 reference for hash algorithms
- Also add RFC references for hash algorithms
- Action: Smith to ping Ira about hash algorithm RFCs
- Drop note 1
- Move md2/4/5 and sha to obsolete values
- Section 6.4.4:
 - Drop empty password support
 - Change syntax to "rangeOfInteger(4:255)"
- Section 6.4.6:
 - "For example, a vendor could register ..."
- Global: Look for lowercase "may"
- Section 6.4.7:
 - '0' (single quotes around IPP values)
- Section 6.4.8:
 - Drop colon from 'tel'.
- Section 6.4.16
 - "the MOST authenticated user" (add most)
- Section 6.4.17:
 - Drop "indicating the Printer supported Job Storage"
- Section 6.4.18:
 - Drop last sentence or turn it into a note
- Section 6.4.19:
 - Last paragraph belongs in section 6.2.4 (this is one of those job template attributes without a default)
- Stopped at section 7
- 8. IPP Driverless Printing Extensions v2.0
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippnodriver20-20201029-rev.pdf>
 - Action: Smith to file errata issue for 5100.19 to incorporate the old pages, impressions, and sheets content from 5100.11-2011
 - Section 3.2: Winnow use cases
 - Section 4.1:
 - Lines 760-761: Drop last sentence (neither defined)
 - Line 770: "defined the CORRESPONDING "limit" operation attribute"
 - Line 772: number of Subscriptions (not Jobs)
 - Lines 773-774: Drop last sentence, not true (no redundant values).
 - Add a note about limitations:
 - List of jobs, subscriptions, etc. can change due to jobs completing, created, etc. which can cause gaps and overlaps
 - No way to get the total number of items (except queued-job-count which isn't static)
 - Use notifications to dynamically maintain a local list of jobs, etc. with an initial snapshot when a reliable, low-overhead list is needed
 - Fix example (first-index=1, 11, 21, etc.) if limit is 10
 - Both comments are resolved

- System service already defines semantics for limit and first-index for its new operations
- Section 4.2:
 - Drop "requesting-user-name" mention for job and subscription ops, sufficient to say "most authenticated user" since RFC 8011 lists requesting-user-name as a valid uri-authentication-supported value
 - Lines 828-830: that lists attributes the Printer can use to filter its response in addition to "document-format" [STD92].
 - Lines 831-833: Add new "Feature Identification" or something like that 4.x subsection to talk about printer-kind and ipp-features-supported
- Section 4.3:
 - Lines 846-847: "... in the response listing the substitutions the Printer will perform to resolve any conflicts."
 - Lines 848-849: Drop last paragraph on subscriptions.
- Section 4.4:
 - Line 821: Use smi2699 or the SMI number for examples (not HP's SMI number)
 - Need more discussion about quality-percent
 - How will it be used?
 - How to relate it (i.e. 100% for line art vs. 100% for photos)
 - Is percentage the right notion, or is it an ordering/index value
 - Mike: feels like we haven't clearly specified the intent of this
 - Smith: Example on line 1258
 - Mike: Wouldn't normally put vendor member attributes as Job Template attributes, should be in collection
 - Q: Is this redundant with job-presets-supported?
 - Maybe, but will users look for quality presets in the regular printer presets?
 - Default macOS print dialog doesn't show driver options (need to expand dialog first)
 - job-presets-supported doesn't allow for clients to support vendor print qualities that are part of the preset
 - Mike: Alternative would be to restore print-quality-hints/print-quality-attributes-supported to list vendor attributes pertaining to quality
 - Uli: Existing print-quality enums are enough for Ricoh (Windows drivers provide more options than Mac)
 - Bill: where does image type come in?
 - print-content-optimize is an existing attribute
 - print-color-mode, print-rendering-intent, printer-resolution, etc.
 - other properties to consider: resource/supply usage, speed
 - Why would you do anything less than best if there isn't a reason to (no difference in cost/usage/speed)?
 - Mike: Maybe add a preset-category (type2 keyword) member attribute for 'quality', 'feature', etc. to job-presets-supported and drop print-quality-col

- Smith: managed print solutions want custom print qualities
- Ira: put hooks for better print quality but don't hold up nodriver to get perfect solution
- Consensus:
 - Drop print-quality-col
 - Add "preset-category (type2 keyword)" to job-presets-supported
 - Add "print-processing-attributes-supported" to list attributes related to print quality/rendering ("printer-resolution", etc.)
 - Talk about intent ("draft" means fast and small ink/toner usage, etc.) vs. process ("draft" means low resolution b&W), presets provide intent mapping to printer-specific attributes/values
- Section 6.1.1:
 - Rename to "client-info-col"
 - client-key: use the IANA registry?
 - Mike: that registry is hopelessly out of date
 - registered type, not name
 - client-name, client-patches, client-string-version: RECOMMENDED
 - No no-value for client-patches and client-version
 - client-version -> point to IDS Attributes for definition of recommended format (binary)
 - Ira: "SWID" tag (software identifier) defined in ISO specs, XML format, IETF has a CoSWID tag RFC (CBOR encoded SWID), max ~180 bytes
 - <https://datatracker.ietf.org/doc/draft-ietf-sacm-coswid/>
 - Add "client-swid (octetString(MAX))" member attribute as RECOMMENDED
- Stopped review at end of section 4.4
- 9. 3D Printing discussions
 - Lots of discussions about security
 - Common criteria discussions
 - 3MF consortium has been doing a lot of work in this area, too
 - Might be time to provide example PWG 3D job tickets for embedding in 3MF files
 - ASTM:
 - Presented a chart showing all of the standards - Paul will request a copy under liaison agreement
 - New WG8 for data transfer - Paul is requesting to join under our liaison
 - PDF Association:
 - Bringing in PDES, inc. (STEP-NC expertise)
 - Did successful tests of PDF 3Di files with STEP-NC content in 2018, migrating to PDF manufacturing workflow
 - Paul is working to get PWG 3D PJT incorporated as the embedded job ticket format
 - AMNOW effort

- MT Connect protocol to connect embedded/industrial monitoring system ("LIMS") to manufacturing equipment
 - "CUPS on a Raspberry Pi"
 - Paul hoping to get IPP 3D added to this system
- <https://www.ncdmm.org/connections/amnow/>
- Q: Should we setup a call time with them?
 - A: Yes, tentatively 1 hour before current IPP WG concall (2pm Thursdays, or even 3-4:30 during a regular IPP meeting)
- 3D concrete printing:
 - Small number of people (30) working in many standards bodies to prototype concrete printing with IPP 3D and PWG Safe G-Code
 - Paul is still working on getting a WebEx scheduled with them

Next Steps / Open Actions

- Next conference calls November 19 and December 3, 2020 at 3pm EST
- Action: Mike, Smith, and Cihan to draft a message to Microsoft concerning the Universal Print Service
- Action: Mike to post a summary of IPP 2.0 and IPP Everywhere 2.0 plans to the IPP mailing list
- Action: Smith to post question about restricting Release Printing to spooling printers to the IPP list - should we attempt to support Releasing Printing for streaming printers?
- Action: Smith to ping Ira about hash algorithm RFCs
- Action: Smith to file errata issue for 5100.19 to incorporate the old pages, impressions, and sheets content from 5100.11-2011
- Action: Mike to submit updated IANA registry file with obsoleted 2911 media names (DONE)
- Action: Mike to post errata against PWG Raster about page headers (PENDING)
- Action: Mike to publish approved 1.1 update 2 self-cert tools (DONE)
- Action: Mike to re-post last call notice (DONE)
- Action: Ira/Smith/Mike to file an errata against PWG 5101.2 to fix ABNF and provide extension points (PENDING)
- Action: Mike, Ira, and Smith to develop IPP Everywhere value proposition content (PENDING)