

# Internet Printing Protocol Workgroup Meeting Minutes

## August 15-16, 2018

Meeting was called to order at approximately 10am MT on August 15, 2018 and 10:30am MT on August 16, 2018.

### Attendees

Gupta Gyaneshwar (Oki Data)  
Smith Kennedy (HP)  
Jeremy Leber (Lexmark)  
Ira McDonald (High North)  
Michael Sweet (Apple)  
Paul Tykodi (TCS)  
Bill Wagner (TIC)  
Uli Wehner (Ricoh)  
Rick Yardumian (Canon)

### Agenda Items

1. IP Policy and Minute Taker
  - [http://www.pwg.org/chair/membership\\_docs/pwg-ip-policy.pdf](http://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-august-18.pdf>
  - Q: Get-User-Printer-Attributes: Require/recommend for IPP System Service?
    - A: Continue discussion in IPP System Service session
3. IPP Everywhere v1.1 (Mike):
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve11-20180704-rev.pdf>
  - <http://www.pwg.org/pipermail/ipp/2018/019670.html>
  - Q: Should we use RFC8011 references where section numbers are used?
    - A: In this document no since this is just for IANA registrations, but perhaps in other documents where there would be some ambiguity.
    - Action: Mike to post guidance about usage of RFC8010/8011 vs. STD92 to IPP WG list
  - Section 14.1: RFC 8011 -> STD 92
  - Q: IPP Everywhere Servers: Do we need conditional conformance requirements here?
    - Right now there are no direct requirements in 5100.14, several indirect ones through RFC 8011
    - A: Probably not
  - Q: Do we require Bonjour for servers?

- A: Maybe we can opt out, but if Bonjour is supported it needs to conform...
- Apple supports configuration profiles and Bluetooth beacons pointing to a server (and all its queues)
- IPP calls print servers a Logical Device
- Section 4:
  - "Logical Devices SHOULD and Physical Devices MUST support DNS-SD."
- Section 4.x: Adopt "if DNS-SD is supported" language as needed
- Section 4.2: Bonjour Printing Specification version 1.2.1
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeveselfcert11-20180704-rev.pdf>
  - Add conditional stuff for DNS-SD on servers
  - Section 4.5:
    - Still have 720dpi sample files link, remove
  - Still Windows 7 - no TLS 1.3 support...
    - Windows 10 is still a non-starter for many corporate environments
    - Continue discussion in future IPP workgroup calls

#### 4. IPP Job Reprint Password

- <https://ftp.pwg.org/pub/pwg/ipp/slides/IPP%20Job%20Print%20Password%20Use%20Cases%202018-08-14.pdf>
- Slide 10: Stored data is \*not\* Job A, it is the processed representation of Job A ("Output A"?)
- Nothing in JPS2 causes an IPP Job object to be retained indefinitely
  - job-save-disposition does not create a Saved Job as defined in JPS2, it saves the output to the specified destination (which may or may not be sufficient to recreate the original Job - all implementation-specific, determined by output mimeType)
  - No way to specify a serialized IPP object representation (application/ipp is a message format, not a serialization format)
  - proof-print asks for a Job to be retained but does not guarantee it is retained indefinitely
- The "job-restartable" keyword on "job-state-reasons" exists to tell a Client whether a Job can be reprinted via Restart/Reprocess/Resubmit-Job
  - What about a "job-retain-until (keyword)" Job Template attribute to explicitly tell the Printer how long to retain a Job
    - 'none', 'default', 'indefinite', 'month', 'week', etc. values
  - "job-retain-until-time (dateTime)" could provide an explicit date and time
  - "xxx-default" tells Client what the default retention policy is.
- Specifying "job-reprint-password" or "job-retain-until[-time]" will cause a Job to be retained so it can be the target of a Reprocess-Job or Resubmit-Job operation
- Q: How to do 'save-only' without job-save-disposition?
  - Nothing explicit, maybe could define 'none' value for "output-

- device"???
    - output-device-supported (1setOf name(127)) lists the supported output-device Job Template attribute values
    - Smith: output-device sounds like a hack
  - Consensus: Probably need to do an errata update of PWG 5100.11 to address inconsistencies/ambiguity
    - Maybe just strip (deprecate) job-save-disposition ("put a stake in the heart" :)
  - Proof Print with "null" output-device would provide full RIP pre-flighting of Job
  - Just do a v2.0 of JPS2 that incorporates the Job Reprint Password content, "job-retain-until[-time]", and other fixes as needed
  - If we do a single "job-print-password" that persists with the original Job and any subsequent copies, that password can be required at the control console OR in the Reprocess/Resubmit-Job request, satisfying both the PIN print and reprint use cases
  - Smith will convert the existing JPS2 Word document to the current template in preparation for JPS2 v2.0
    - Filename should be wd-ippjobprinterext20-yyyymmdd.ext
5. IPP System Service v1.0 (Mike)
- <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippsystem10-20180701-rev.pdf>
  - Global: Remove old comments
  - Section 7.2.27: Add missing table reference before "lists the ..."
  - Section 7.3.21: Remove redundant "semantically analogous to"
  - Section 7.3.22:
    - Both are "semantically analogous to"
    - "with severity suffixes REMOVED"
    - Add keyword for shutting down
  - Global: Check all "semantically equivalent to" to make sure they are either exact mappings (equivalent) or derived mappings (analogous)
  - Section 7.5.1:
    - Add missing table reference.
  - Everything but resources have been prototyped in ippserver
    - That work should be done by the end of September
6. TLS 1.3 (Mike)
- Site policies may influence cipher suite selections
  - Aside from TLS protocol issues, X.509 certificates are also an issue (MD5 or SHA1 hashes are no longer considered secure, SHA2 required by most browsers)
    - CUPS does bitwise comparisons to avoid hash issues
    - May want to say something specific for IPP (recommendations, etc.)
    - CA's have a max life of 3 years, self-signed (printer-generated) are typically 10 years
7. IPP Authentication Methods (Smith)
- <https://ftp.pwg.org/pub/pwg/ipp/whitepaper/tb-ippauth-20180629-rev.pdf>
  - Abstract: Drop "is a whitepaper", reword "and how they can affect"

- Filename: wd-ippauth10-yyyymmdd.ext
- Q: Should this be a best practice?
  - Just documenting what exists, not making hard recommendations
  - A: "Ought to" and other language is close enough
  - Make it a best practice, use real conformance words (SHOULD, MAY, etc.)
  - Add conformance words to terminology section (SHOULD, MAY)
- Section 3:
  - Title: "Rationale"
  - Reword: "Although the authentication protocols can be used as-is with IPP, the IPP Client is not a web browser and implementors SHOULD consider factors that affect the user experience."
  - Add sub-sections for use cases, out-of-scope, etc.
    - Out of scope is definition of new auth methods
- Section 3.1:
  - "Overview"
  - Make top-level ("section 4")
  - Swap first and second sentences in first paragraph (start with what Authentication is, then talk about how a Printer uses it)
  - "An IPP Printer" -> "A Printer" or "Printers"
- Section 3.1.7:
  - Status codes only get returned after a successful TLS negotiation (Client and Printer certs OK, but subsequent validation might fail, e.g. user not authorized)
  - Action: Smith to look up IETF OAuth WG minutes from IETF 102 to see if there is anything germane to IPP
  - Stopped at section 3.1.7
- 8. IPP 3D Printing Extensions v1.1 (Mike)
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipp3d11-20180704-rev.pdf>
  - Sections 8.2.1 and 8.2.2:
    - Define units (relative humidity and degrees Celsius)
  - Section 14.1:
    - Fix STD92 reference (both RFC 8010 and 8011, use html/std92)
      - Title is just "Internet Printing Protocol/1.1"
    - Check for UAX/UTR changes - just point to the base directory and not the specific version of the UAX/UTR
  - Leave as prototype status while we get more review from third parties
- 9. PWG Safe G-Code (Mike)
  - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-pwgsafegcode10-20180704-rev.pdf>
  - Section 5: Talk about what to do when a job is canceled
  - Section 7:
    - Fix STD92 reference
  - Leave as prototype status while we get more review from third parties
- 10. 3D Liaison Discussions (Paul)
  - ASTM: We need to provide a document they can reference for the PWG leaglease
  - IEEE P3030: In hibernation

- ISO: New 3D printing workgroup SG12 formed to coordinate all ISO 3D standards development, someone from HP is representing the US, Paul is representing the PWG
  - Action: Paul/Smith to determine whether ISTO needs to do anything to participate in ISO SG12
- 3D PDF Consortium is now an ISO TAG?
- 3MF:
  - Work on putting together 3D job ticket examples in 3MF sample files
  - Keep pushing on getting liaison agreement signed
- IPP 3D presentation: schedule review at a future IPP WG concall
- SME:
  - ITEAM database for standards, products, materials, etc. information
  - GUI/web API to allow lookups/guidance/cost information
- "3DHEALS" organization
  - <https://3dheals.com>
  - Focus on using/encouraging 3D printing for medical uses

#### 11. Next Steps

- Job Reprint Password now IPP Job and Printer Extensions Set 2 (JPS2) v2.0, pushed out
- MFD Alerts errata - maybe Prototype Draft by Q4 2018
- Defer RFC updates - errata are good enough
- Q: IPP Everywhere: required pwg-raster-document-type-supported values?
  - A: Not OK to add requirements in an errata, but we can add recommendations for the common types
  - Add a note/rationale that we can't make the types required (oversight in 1.0 spec)
  - Also in self-cert document that we are testing for the recommended types
- Fix links on meeting page to point to IPP slides

### Next Steps / Open Actions

- Next conference calls on August 30, 2018 and September 13, 2018
- Action: Mike to post guidance about usage of RFC8010/8011 vs. STD92 to IPP WG list
- Action: Smith to look up IETF OAuth WG minutes from IETF 102 to see if there is anything germane to IPP
- Action: Paul/Smith to determine whether ISTO needs to do anything to participate in ISO SG12
- Action: Mike to post approval of Canon sizes to IPP mailing list thread (DONE)
- Action: Mike to assemble a list of specifications that reference PWG 5100.7 (DONE)
- Action: Smith to post diagrams showing different encrypted job topologies (PENDING)

- Action: Mike to investigate IPPS issue in Wireshark - “ipp” filter not working (PENDING)
- Action: Smith to follow-up on the 3MF liaison agreement (IN PROGRESS - Alexander Auster (Autodesk) will be taking over, Kurt Hunter has retired from Microsoft, Adrian is now shepherding things)