Internet Printing Protocol WG Minutes
February 3 and 4, 2015

Meeting was called to order at approximately 1:00pm PT February 3 and 4, 2015

Attendees

Russell Brudnicki (Kyocera Document Solutions)
Smith Kennedy (HP - call in)
Daniel Manchala (Xerox)
Ira McDonald (High North - call in)
Joe Murdock (Sharp)
Jesse Sanchez (Intel)
Ole Skov (MPI Tech)
Alan Sukert (Xerox - call in)
Mike Sweet (Apple - call in)
Paul Tykodi (TCS - call in)
William Wagner (TIC)
Rick Yardumian (Canon)

Agenda Items

1. IP Policy and Minute Taker
    a. Policy accepted with Mike taking the minutes
2. Slides
    a. http://ftp.pwg.org/pub/pwg/ipp/slides/ipp-wg-agenda-february-15.pdf
    b. LDAP in RFC Editor's Queue now (awaiting publication)
    c. Charter:
        - Fix IPP2X to be full IEEE Standard (item d and milestones)
        - Smith would like to contribute to IPP Concise investigation
            - Could also talk about supporting both CBOR and JSON encoding
        - Line 139, should be comma after "Web Services" and before "CBOR"
        - Add sub-headings before list of current and potential projects
        - IPP2X-1: for IEEE Standard
        - IPP11-1: for IETF Standard
        - IPP2X-2: for IEEE Standard, PWG Formal Vote
        - Line 180: should be EVEMFD-2 (second milestone)
    d. Self-Cert
        - Call for people to test the submission page, contact Mike Sweet for assistance
        - Hostname matching issue is fixed
        - media-needed issue is fixed
        - Q: Since Mopria is using tests, have there been comments from

　　　　　　　　　　them?
　　　　　　　　　　　　　-　　A: Very little feedback at Mopria meetings, nothing directly
　　　　　　　　　　　　　　　reported
3.　IPP Shared Infrastructure Extensions (INFRA)
　　　a.　http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippinfra10-20141118.pdf
　　　b.　"strings" files are message catalogs
4.　IPP System Service (SYSTEM)
　　　a.　http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippsystem10-20141102-rev.pdf
　　　b.　Section 5.5:
　　　　　-　　Remove highlighted issue
　　　c.　Table 3:
　　　　　-　　Add Create-Service, Delete-Service?
　　　　　　　-　　Check previous minutes (prior to November 2014 F2F) for
　　　　　　　　　discussion of Delete-Service
　　　　　　　-　　Create-Service will need some sort of generic Service
　　　　　　　　　Template...
　　　　　-　　Need to make policy hierarchy explicit (System policy trumps
　　　　　　　Service policy)
　　　　　　　-　　"pass-through" operations like Restart-One-Printer
　　　　　-　　"Get" operations are user-accessible operations, may or may not
　　　　　　　need authentication
　　　　　　　-　　Why? Because you need to be able to discover URIs for
　　　　　　　　　supported services, sometimes you only have an IP address
　　　　　　　　　and no resource path info (which isn't standardized for print)
　　　　　　　-　　Unauthenticated/guest access probably returns limited info,
　　　　　　　　　just like Get-Jobs, etc.
　　　d.　Finished with portion of document that was completed.
　　　e.　Proposed format for operations:
　　　　　-　　Reference to SM System Service and SM Resource Service
　　　　　-　　Access rights
　　　　　-　　Request attributes
　　　　　-　　Response attributes
　　　　　-　　Only go into gory details as needed
　　　f.　Global: Delete notes about not supporting notifications
　　　　　-　　New Create-System-Subscriptions operation to create system
　　　　　　　object subscriptions
　　　　　-　　Amended semantics for the existing Cancel/Renew/etc. operations
　　　　　　　to support system-uri as target
　　　g.　What about overloading operations for multiple services, and how does
　　　　　that affect policy?
　　　　　-　　Each service has its own policy object, so no problems with
　　　　　　　overloading
　　　h.　Add resource operations from November F2F
　　　i.　Add Cloud Register/Deregister operations to support INFRA
　　　j.　Do we want an Identify-All-Printers operation?
　　　　　-　　NO! :)
5.　HP: job-password constraints/pattern?

  a. No way to constrain the characters/pattern of the job-password values.
  b. Regular expressions would work, but hard to parse by humans
  c. ABNF is more readable by humans, but harder to parse by computers (not a lot of usable/available code)
  d. Pattern strings, e.g. "1111" for 4-digit PINs easier, but may be limiting
  e. What about password policies (a la ActiveDirectory/OpenDirectory)?
   - NIST SP-800 best practices
   - SANS institute password policies
   - XACML password policies
   - PINs are not generally considered secure but are used ubiquitously
   - Smith: http://keepass.info/help/base/pwgenerator.html
   - Action: Smith Kennedy, Ira McDonald, and Joe Murdock to research password policies for job-password attribute
  f. HP (Smith) working on a white paper

6. HP: document encryption?
  a. Encryption of document data a la RFC 1847 (multipart/encrypted)
  b. Kept encrypted until processed
  c. Also document signatures (to detect tampering)
  d. Q: What MIME media type?
   - A: TBD
  e. Q: What about key management?
   - A: Key distribution is a hard problem, look at what TLS/CBOR/etc. folks have done
   - All out-of-band from job submission/IPP
    - Web page like for paid printing?
  f. Part of IDS document security ticket work
  g. HP (Smith) working on a white paper (part of job-password white paper)
  h. Smith will post two white papers for job-password and document encryption

7. IPP Implementor's Guide 2.0 (IG)
  a. http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippig20-20150128-rev.pdf
  b. Discussion: where to put source files for figures?
   - Zipped in the working draft directory for anything that is not referenced by the specification itself
   - Do not include PlantUML jar (Java software) file (IP issues)
  c. Discussion: size of documents increased substantially
   - Look at alternatives - PNG or cut/paste from Preview instead of importing EPS directly into Word
  d. Section 10
  e. Section 10.1:
   - "Job Receipts: The "xxx-actual" Attributes"
   - Rewrite paragraphs to explain that "xxx-actual" attributes cannot be used to detect substitutions and the values are only stable when the job is in a terminating state (aborted, canceled, or completed).
   - Reference PWG 5100.8 which defines the "-actual" attributes
  f. Global: "canceled" and "canceling" instead of "cancelled" and "cancelling"
  g. Section 10.2:

- PWG 5100.13 defines preferred-attributes
- Title: "Printer Constraints: The "preferred-attributes" Attribute" (or something like that)
- Only supported when "preferred-attributes-supported" is present in Get-Printer-Attributes response
- Line 2036: "don't" -> "doesn't"
- Reword, and talk about extra round trips - this is an additional method of resolving constraints beyond job-constraints-supported/job-resolvers-supported but not the best practice.

h. 10.x: Q: Aren't there any other gotchas to talk about?
   - A: Nothing that has been brought up so far
   - What about xxx-supplied? new 10.3 subsection "Supplied Operation Attributes: "xxx-supplied"", talk about lack of widespread implementation...
   - May find other useful material during last calls...

i. 10.x: Q: Do we even want any of 10.x?
   - A: 10.1 documents something that has been misused, so that is useful
   - 10.2 is already covered in the constraints section

j. Section 11.1:
   - A Client SHOULD use UTF-8 [STD68] and restrict characters to the Network Unicode [RFC5198].
   - Pull from boilerplate I18N text in template.
   - Reference PWG 5100.13 for printer-strings-xxx

k. Section 11.2:
   - Reword
   - Reference PWG 5100.13 for printer-strings-xxx

l. Copyright: 2015 in footer

m. Move security considerations just after I18N considerations

n. Move conformance requirements before I18N considerations

o. Section 12:
   - Rename "Conformance Requirements" to "Conformance Recommendations"
   - Move before I18N considerations
   - Drop 12.1 and 12.2
   - 12.3: "Client Conformance Recommendations", "Clients SHOULD: ... list of SHOULDs"
   - 12.4: "Printer Conformance Recommendations", "Printers SHOULD: .. list of SHOULDs"
   - Semicolons at end of all items but the last.

p. Check references
   - Add informative reference to IANA IPP registry (IANA-IPP, link is on the IPP WG home page)

q. Section 16: Remove

r. SK1: Drop

s. SK2: Yes, testable

t. SK3: No, Printer only returns URIs to itself (aliasing "/" to "/ipp/print" is OK,

just not ok to point to a different service like "/ipp/faxout" from the print service) - POSTing to "/" (or any other generic/alias path) targets the default print service

u. SK4: No, see SK3

v. SK5: Yes, "foo" will be listed in document-format-varying-attributes if it changes based on the document-format supplied to Get-Printer-Attributes

w. SK6: Combine two, BEST is to send a Get-Printer-Attributes request with document-format (if known), plus any other job template attributes, check whether the document-format-varying-attributes and/or printer-get-attributes-supported attributes affect the requested attributes, and then (if necessary) send subsequent Get-Printer-Attributes requests with the changed values.
    - Initial request MAY include document-format and other Job Template attributes, client may only support single format (e.g. JPEG) or may already have the list of supported formats from Bonjour TXT record
    - Add footnote that this flow can also be used by a background spooler

x. Global: Add Figure captions to all diagrams

y. SK7: N/A

z. SK8, SK9, SK10, SK11: FaxOut is fine, defer 4.8.x until a later version of this document

a. SK12: Clarify what each value means
    - No new keyword definition, clarify what 'guaranteed' means (a high level of confidence vs. 100% confidence that all overrides will work)
    - Action: Ira to post an issue on the PWG web site for PWG 5100.11's convoluted definition of 'guaranteed'.

b. SK13: Yes

c. SK14: Uncollated copies are still used; generally speaking, ether the Client or Printer generates the copies (collated or otherwise)

d. SK15: Resolved, using PAPI (Mike will review separately)

e. SK16: Don't need to say anything for the printer

f. SK17: Nothing to do

g. SK18: ???

h. Section 8.2.3: Extra (blank) heading - remove it

i. SK19: Nothing to do

j. SK20: Nothing to do

k. SK21: Removed

l. SK22: Removed

m. SK23: Reword:
    - If a Printer is configured to only support IPPS (or IPP over HTTPS), if Client sends IPP over HTTP request the Printer MAY close the connection, return 301 Moved Permanently, 400 Bad Request, or return 426 Upgrade Required to upgrade to TLS. There is no IPP response, just a HTTP response.
    - Also HTTP requests for embedded web server or resources can do the same thing.

- Also HTTP ALTSVC IETF draft: https://tools.ietf.org/html/draft-ietf-httpbis-alt-svc-05
    n. Section 9.2.x: "IPP over HTTPS" instead of "TLS IPP"
    o. Smith to post an updated stable draft for WG Last Call

Next Steps / Open Actions

- Next IPP conference calls March 2 and 16, 2015 at 3pm ET
- Start WG Last Call of IPP Implementor's Guide 2.0 (IG)
- Action: Smith Kennedy, Ira McDonald, and Joe Murdock to research password policies for job-password attribute
- Action: Ira to post an issue on the PWG web site for PWG 5100.11's convoluted definition of 'guaranteed'.
- Action: Mike to post IPP registration policy to FTP server (PENDING)
- Action: Mike to post PWG Last Call of IPP INFRA to span February 2015 F2F (DONE)
- Action: Mike to send Ira description and examples of Register-System operation (PENDING)