

# Internet Printing Protocol Workgroup Meeting Minutes

## April 29, 2015

Meeting was called to order at approximately 3pm PT April 29, 2015.

### Attendees

Aveek Basu (Lexmark)  
Till Kamppeter (Canonical)  
Smith Kennedy (HP)  
Jeremy Leber (Lexmark)  
Daniel Manchala (Xerox)  
Ira McDonald (High North)  
Matthew Morikawa (Kyocera)  
Joe Murdock (Sharp)  
Mike Sweet (Apple)  
Paul Tykodi (TCS - call in)  
William Wagner (TIC)  
Rick Yardumian (Canon - call in)

### Agenda Items

1. IP Policy/Minutes
  - a. IP policy announced, Mike Sweet taking minutes
2. Slides:
  - a. <http://ftp.pwg.org/pub/pwg/ipp/slides/ipp-wg-agenda-april-15.pdf>
  - b.
3. Review INFRA and Last Call Comments
  - a. <http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippinfra10-20150416-rev.pdf>
  - b. <http://ftp.pwg.org/pub/pwg/ipp/wd/lcrc-ippinfra10.txt>
  - c. Table 3, Note 1: pending-held, Output Device
  - d. Update document template (list paragraph style seems to be missing space between lines)
    - a. Post updated clean draft and start PWG Formal Vote for 6 week period (middle of June?)
4. Review IPP Implementor's Guide 2.0
  - a. <http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippig20-20150303-rev.pdf>
5. Review IPP System Service
  - a. <http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippsystem10-20150428-rev.pdf>
  - b. Abstract, Section 1:
    - Registration of IPP System, through its IPP Proxy, with one or more Cloud Imaging Systems.
  - c. Section 1.1, line 195: Protocol Endpoint (capitalize)
  - d. Section 2.2:
    - Reword Infrastructure System a bit to make it clear that it accepts

- requests/connections from Clients and Proxies, contains zero or more instances of an Infrastructure Printer
  - Protocol Endpoint: Work with IDS and/or use IETF NEA definition? Must include Clients, Printers, Systems, etc.
- e. Section 3.4: out-of-scope for non-IPP cloud imaging systems
- f. Table 1, Note 4: Remove "Register-System"
- g. Lines 482-483: owner-uri and owner-vcard are single-valued.
- h. Table 3:
  - Replace Cancel-Xxx-Subscriptions with Cancel-Subscription, reference RFC 3995
  - Replace Renew-Xxx-Subscriptions with Renew-Subscription, reference RFC 3995
  - Replace Get-System-Notifications with Get-Notifications, reference RFC 3996
- i. Resource Discussion:
  - Resources are managed by the System - IDs are unique across all services of a system
  - Persistence is decided by System
    - System-wide resources typically persisted for life of system
    - Printer/service resources persist for life of printer/service
    - Job resource persist for life of job
  - Residence (after restart) depends on use/implementation
    - Job resources retained for as long as document data
  - Installation/use of resources through new operation ("Install-Resource"?)
    - Firmware, software, fonts, etc.
  - No expiration/lease like in PWG Network Resource Service
    - Too much like DRM, still manual maintenance
    - Just cancel resource at the right time
    - Avoids resource race conditions
  - Resource categories:
    - Static resources already supported in INFRA
    - Executable resources: focus on firmware and applications, but not code that runs as part of a job (ew!)
    - Template resources: define what an IPP Job Ticket resource looks like, need to have a way to differentiate between Print and FaxOut and Scan job tickets
      - IPP Job Ticket has a few select operation attributes (destination-uri, etc.) + Job Template attributes
      - Looks like a Create-Job request?
      - No document template attributes - those can be inferred from Job Template as needed.
  - Resource Description attributes:
    - resource-name (name)
    - resource-info (text)
    - resource-string-version (text)
    - resource-version (octetString)

- Resource Status attributes:
    - resource-id (integer(1:MAX))
    - resource-state (type1 enum): pending=3, ready=5, busy=6, canceled=7
      - no aborted or completed - just use resource-state-reasons
    - resource-state-reasons (1setOf type2 enum): none, others to be discussed
      - residence/installation status reported here
      - reason for cancel reported here
      - reason for busy reported here
    - resource-uuid (uri)
    - resource-data-uri (uri)
    - resource-format (mimeType)
    - resource-k-octets (integer(0:MAX))
    - resource-originating-user-name (name)
    - resource-originating-user-uri (uri)
    - date-time-at-creation (dateTime)
    - date-time-at-canceled (dateTime)
    - time-at-creation (integer)
    - time-at-canceled (integer)
    - resource-printer-uri (uri) for Printer and Job-scoped resources
    - resource-job-id (integer(1:MAX)) for Job-scoped resources
    - resource-hash/signature???
  - Extensions for Printers:
    - system-uri-supported (1setOf uri) Printer Description attribute pointing to System service
    - Get-Resources, Create-Resource, Send-Resource-Data, Cancel-Resource using printer-uri
    - Create-Job with resource-attributes-tag group, a la subscriptions
      - Response includes resource IDs
      - Upload resource with Send-Resource-Data operation or reference existing resource-id to do a fast copy whose life is limited to the job
      - No Cancel-Resource for jobs - just cancel the job to do it
      - Send-Resource-Data before Send-Document/URI
    - job-resource-ids (1setOf integer(1:MAX)) Job Status attribute that lists the resource IDs associated with a Job.
      - Job resources persist with the Job/Document data
- j. Create-Printer
- Drop printer-state and printer-is-accepting-jobs
    - Initial state is stopped, "down" reason
    - Initial printer-is-accepting-jobs is false.
    - Requires Startup-Printer call to bring the service up, followed

- by Enable-Printer to set printer-is-accepting-jobs to true
- How to provide resources?
  - Create resource in system and reference them (resource-data-uri)
  - PUT them after creating the service
- How to associate with subunits?
  - Could use list of subunit types and IDs
  - Semantic Model does not go into great detail
  - One of the envisioned uses is to create "copies" of a service with restricted capabilities, e.g. a service for guests that only allowed B&W printing
  - Default (modulo extensions) is to create a Printer that is associated with all of the subunits applicable to the printer-service-type
- k. Get-Printers
  - Yes: printer-service-type, first-index, limit, printer-location, printer-geo-location (proximity defined by uncertainty value in geo: URI),
  - No: my-printers (gets into authentication which will cause problems)
  - Change: printer-is-accepting-jobs, printer-state become which-printers (type2 keyword)
    - all
    - idle
    - processing
    - stopped
    - accepting (is-accepting=true, state=idle or processing)
    - not-accepting (is-accepting=false)
- l. Register-Output-Device (instead of Register-System)
  - Drop system attributes in request? Continue discussion later
  - Put static resource attributes in the printer groups of the response
- m. Create-Resource
  - Good, add type and category attributes to Resource Description attributes
- n. Send?-Resource
  - Send-Resource-Data
  - Agreement on not supporting replacement of resource data
- o. Stopped before section 6
- 6. Review IPP Everywhere Printer Self-Certification Manual
  - a. <http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeveselfcert10-20150415-rev.pdf>
  - b. Submission form:
    - Call out optional fields
  - c. Printer list page:
    - Add reference to CUPS/print servers/Linux Distributions
  - d. Q: How to handle print servers?
    - A: Probably ok for hardware NAS/print server boxes, let's just list CUPS/Linux as a common solution for older printers
    - Look in future to providing specific guidance here
- 7. Review IETF IPP/1.1 RFCs

- a. <http://tools.ietf.org/html/draft-sweet-rfc2910bis>
    - Beginning of tags section, add reference to IANA registry for complete list of registered tags
    - Global: HTTP1.1 -> HTTP/1.1
    - Digest: SHOULD for Client supporting Digest
    - Section 8.1.2, add [RFC2911bis] reference here
    - application/ipp registration template: add note that this MIME media type has already been registered, just update the reference
    - Add main body section (last before references) listing changes from RFC 2910
  - b. <http://tools.ietf.org/html/draft-sweet-rfc2911bis>
    - Select Appending B.1 (conformance terminology)
    - Section 4.2.9 (Purge-Jobs):
      - This deprecated operation...
      - Add a note of why it is deprecated
    - Section 4.3.1/2: check for "existing multi-document job" and fix
    - Section 5.1.2: fix RFC 1766 -> 5646
    - Section 5.1.8: fix RFC 1766 -> 5646
    - Section 5.4.3: Remove ssl3, add ssl3 (obsolete) to registration
    - Update date-at-xxx to SHOULD
    - Section 5.4.15: Change 0x8FFF to 0x7FFF
    - Section 5.4.27: Add space before RFC2316 reference
    - Global: Check references so they are title/name instead of RFC nnnn
    - Restart-Job: deprecated
    - Section 6.2.2: Restart-Job: SHOULD NOT
    - Section 6.2.4 (Versions): Drop "at the time" and 1.0 stuff.
    - Section 6.2.5: Drop IETF from standards-track
    - Talk a bit about type3
    - Media names: point to MSN2
8. Review IEEE IPP 2.0, 2.1, and 2.2
    - a. <http://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipp20-20150417-rev.pdf>
    - b. Deferred to next IPP concall
  9. Proposal: Adopt IPP 3D Printing Extensions
    - a. Defer - based on BOF discussions, we need to change the scope of the work and extensions
    - b. Schedule conference call for June (on 3d-printing@pwg.org mailing list)
    - c. Work with Anne Price to do outreach for participation
  10. Proposal: Accounting Attributes
    - a. Accept, review and approve in IPP WG concall
    - b. Change pages-col-completed -> pages-completed-col
    - c. Action: Mike to post accounting attributes registration template to IPP list

## Next Steps / Open Actions

- Next conference calls May 11 and June 8, 2015 at 3pm ET

- Start PWG Formal Vote of IPP Shared Infrastructure Extensions (INFRA)
- Review and approve accounting attribute registrations
- Action: Mike to post accounting attributes registration template to IPP list
- Action: Ira to post an issue on the PWG web site for PWG 5100.11's convoluted definition of 'guaranteed'. (PENDING)
- Action: Mike to send Ira description and examples of Register-System operation (DONE)