

Internet Printing Protocol Meeting Minutes

November 12-13, 2024

Meeting was called to order at 11:00am ET on November 12 and 11:30am ET on November 13.

Attendees

Charles Armstrong (Canon)
Tsutomu Iwasaki (OKI)
Smith Kennedy (HP)
Jeremy Leber (Lexmark)
Ira McDonald (High North)
Michael Rhines (Qualcomm)
Michael Sweet (Lakeside Robotics)
Anthony Suarez (Kyocera)
Paul Tykodi (TCS)
Bill Wagner (TIC)
Uli Wehner (Ricoh)
Michael Zilller (Microsoft)

Agenda Items

1. PWG IP policy, minute taker, administrivia
 - Mike is taking minutes
2. Status:
 - <https://ftp.pwg.org/pub/pwg/ipp/slides/ipp-wg-agenda-november-24.pdf>
 - ACME-IoT
 - Smith: "Web book" that describes how Matter works, comes back to the notion of "Strong Device Identity"
 - Mike: Also talking about 802.1X for "bootstrapping identity" on the network
 - Need to determine strong identity and then how to approve certificate signing requests
 - Ira: Alldispatch request came from ADD WG, worth looking at "deep space" session as well
 - Envelopes
 - Smith: Flap open or closed?
 - Mike: Assumption was you didn't print on flap, too many variables
 - Charles: Kakugata (short edge flap) envelopes are flap-open (but not printed on)
 - Uli: Depending on the envelope and printer, you might need to print flap-open or flap-closed to avoid sealing or wrinkling the envelope
 - Smith: If flap is open, why not report envelope size including flap?
 - Charles: Flap size/shape not standardized

- Uli: Also wouldn't want to format over flap
 - Ira: Flap size is completely irregular according to manufacturer
 - Q: Should the PWG add variant size names for C-series envelopes?
 - Charles: That would allow for proper localization
 - Mike: Only down-side is that some clients (macOS for sure) only track media dimensions so the naming would be lost
 - Smith: Making decisions based on Client platforms is distasteful
 - Q: What about selecting envelopes via "media-col"?
 - Michael Z: If the printer needs to do something different based on the flap location then we need media-orientation or media-source-properties in media-col
 - Smith: Makes more sense to define a new member attribute than risk interop issues with media-source-properties
 - Smith: Do clients use a mix of media or media-col?
 - Mike: At least Linux, macOS, iOS, Android, and Windows seem to only use media-col, custom client software often uses media
 - Mike: Want to test what would happen for multiple media size names with the same dimensions on existing clients
 - Action: Mike to do some media size name testing for different envelope sizes
 - Uli: Windows lists multiple forms with different names but the same dimensions?
 - Continue discussion at the next (Dec 5th) IPP workgroup meeting
3. IPP Everywhere v2.0 (EVE) and IPP Everywhere Printer Self-Certification Manual v2.0 (EVESELF CERT)
- IPP Everywhere Self-Cert Tools
 - Smith: Do any of these tests require interaction?
 - Mike: No, although the IPP Everywhere tests do include the media-empty test requiring interaction.
 - Ensure there is a way to disable user interaction as needed, so that CI is possible
 - Smith: What about the IPP Everywhere tests, are there separate includes or ???
 - Mike: The IPP Everywhere 1.1 tests had a core set of IPP tests and a separate set of document format tests. We had talked about specific tests for finishers, duplex printing, etc. but it is too early to say whether it will be one test file including the sub-tests or just separate tests. Need to be able to generate self-certification results...
 - Q: What localizations are best for the UI?
 - Smith: Run a doodle poll/survey monkey for what languages are needed
 - Bill: Certainly Japanese

- Smith: How are Flutter/Dart applications localized?
 - Mike: Strings files
- Smith: What kinds of features/categories are we going to test?
 - Mike: We have discussed this in general, but the goal is to be able to write tests and include them as needed
 - Smith: Currently too fuzzy, should spend some time coming up with the short list for 2.0
- ipptool sources will be "included" or embedded into ippevetool to avoid external dependency
- Smith: Interested in helping out
- Next steps are to finalize design and specific tests for 2.0, possibly with "tiger team" meetings, get it done before Feb 2025 F2F
- IPP Everywhere v2.0
 - printer-name and printer-dns-sd-name (Smith)
 - Previous discussion concluded that the default value of printer-dns-sd-name SHOULD be the same as printer-name, defaulting to "Make Model (Serial)", with references to NODRIVER and BASE
 - Mike will post updates of both documents
 - IPP Everywhere 2.0 with printer-dns-sd-name and other changes
 - IPP Everywhere Printer Self-Certification Manual v2.0 with outline of the tests that will be done
- 4. IPP Firmware Update Extensions v1.0 (FWUPDATE)
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippfwupdate-20240911-rev.pdf>
 - Q: Do we need to support individual component updates or just a single monolithic update?
 - Ira: Avoid separate component updates, should be a single, tested image for updates
 - Uli: Current updates are one ginormous image
 - Jeremy: Same here, one big firmware update image
 - Charles: Same here, but when a printer is upgraded (add a finisher, etc.) it might need a new (bigger) firmware update image?
 - Bill: If we don't add multiple updates right now, could you just do multiple update operations?
 - Mike: I don't see why not
 - Ira: That's how it works for the automotive industry
 - Smith: Does this work like IPP System (push only)?
 - Ira: No, push and pull, requires a query to get a complete manifest
 - Smith: Sounds like full package management?
 - Ira: Similar, but everything is bundled up in a single update package
 - Smith: For printing, any of the package/manifest stuff is out-of-scope as part of the communications between the printer and firmware repository
 - Consensus is that assuming a single firmware update image is OK
 - Q: What class/category/market segment do we want to support?

- Ira: Home through Enterprise, not Production (IPP/2.0 and IPP/2.1, not IPP/2.2)
- Uli: We focus on Enterprise, good excluding Production
- Consensus is to target IPP/2.0 (home/workgroup) and IPP/2.1 (enterprise) printers
- Bill: Early on we talked about including implementation recommendations
 - Make sure that firmware updates are staged properly (so it won't leave the printer in a bad state), newer updates include fixes from previous updates, etc.
 - Mike: There is probably a standard for this?
 - Ira: There are some ISO specs but they are tilted towards high-end enterprise deployments, probably not well-suited; might be an IEEE spec?
 - Smith: Does the EU have things?
 - Ira: EU has a lot but they don't mandate behavior or protocols
 - Ira: Probably best to provide our own "Deployment Considerations" section
 - Mike: I can write some text based on what I've done in the past
 - Smith: Are there standards we can reference vs. hand waving?
 - Ira: NIST spec on IoT software updates, like the term "distribution"
 - <https://pages.nist.gov/IoT-Device-Cybersecurity-Requirement-Catalogs/technical/update/>
- Uli: Seeing a move from local firmware updates to the cloud for enterprise printers
- Next steps:
 - Yank printer-firmware-update-name and 1setOf collection stuff
 - Talk about printer-firmware-update-uri at next concall
 - All members: Review how printer firmware updates are done at your respective companies so we can confirm that the proposed approach will work and be implemented

5. 3D Printing Discussions

- 3mf
 - Volunteers:
 - Jeremy may be able to generate some 3D models in 3mf format
 - Printers:
 - Jeremy: Probably not Lexmark for now
 - Paul: No standard used (yet) for submitting jobs, not asking for that yet
 - Uli: I have no exposure to the 3D printing stuff
 - Smith: Not clear whether HP printer market intersects with the standards/companies that Paul has been working with, would it make sense to focus on those vendors?
 - Paul: Current vendors aren't looking for standards to

- solve a money/security/customer problem yet that a proprietary solution isn't already available
 - Smith: Vendors have a vested interest in making things "hard"
 - Mike: Current solutions work well enough, no pressure to change
 - Paul: Vendors don't know why they'd want to change - some signs high-end vendors might be willing to look at it
 - Mike: The "big ask" is for vendors to a) support 3MF and b) prototype support for PJT3D embedded in 3MF. Once we have vendors we can provide sample 3MF files for the kinds of printers being tested
 - No vendors have come forward to investigate supporting 3MF with an embedded job ticket
 - Priority/schedule: Low, wait for vendor(s) to come forward before we devote resources to generating sample files
 - Concrete printing
 - Still working towards getting Safe G-Code testing done
 - VDMA OPC UA
 - Come up with one protocol/data model for interoperability
 - Originally secure remote job submission was seen as a "low priority" feature
 - Paul will report on what happens at the November 27, 2024 meeting in the February 2025 F2F meeting, which will determine whether we will be going to Formnext 2025
 - Smith: Might be useful to look at the "digital thread" diagram again and see where IPP and other standards fit?
 - Paul: This would be useful for talking to others about where IPP and the PWG fits
 - Prepare slides for February 2025 F2F
6. Next steps:
- Publish IPP/2.x 4th Edition
 - Continue work on Firmware Update extensions

Next Steps / Open Actions

- Next conference calls on December 5 and 19, 2024 at 3pm
- Talk about more "Strong Device Identity" at future (soon) concall, determine requirements/use cases
- Action: Mike to do some media size name testing for different envelope sizes
- Action: Mike to update the IPP How-To Guide and post to IPP list for discussion (PENDING)
- Action: Mike to update IPP Everywhere 2.0 test files (PENDING - started work on it)

