The Printer Working Group

IPP Workgroup Session

August 9, 2023

Before We Begin...

- PWG Antitrust Policy:
  - https://www.pwg.org/chair/membership_docs/pwg-antitrust-policy.pdf
  - The IEEE-ISTO Printer Working Group ("PWG") will not become involved in the business decisions of its Members. The PWG strictly complies with applicable antitrust laws. Every PWG meeting attendee shall comply with this policy. The PWG Officers and PWG Workgroup Officers are responsible to ensure that this policy is adhered to in all PWG activities.
- PWG Intellectual Property Policy:
  - https://www.pwg.org/chair/membership_docs/pwg-ip-policy.pdf
  - TL;DR: Anything you say in a PWG meeting or email to a PWG address can be used in a PWG Document
  - (but please do read the IP policy above if you haven't done so)
- **This meeting is being recorded to assist in preparation of minutes but will not be published**

Agenda

August 9, 2023 (US Eastern Daylight Time)

When	What
10:00 - 10:45	PWG Plenary
10:45 - 11:00	IPP WG: Status
11:00 - 11:15	IPP WG: PWG Media Standardized Names v2.1
11:15 - 12:00	IPP WG: IPP OAuth Extensions v1.0

August 10, 2023 (US Eastern Daylight Time)

When	What
10:00 - 12:00	IDS WG
12:00 - 12:45	Lunch Break
12:45 - 13:45	IPP WG: 3D Discussions
13:45 - 14:00	IPP WG: Next Steps

Charter

- Current charter:
  - https://ftp.pwg.org/pub/pwg/ipp/charter/ch-ipp-charter-20210409.pdf
- The Internet Printing Protocol (IPP) workgroup is chartered with the maintenance of IPP and the IETF IPP registry, and support for new clients, network architectures (Cloud, SDN), MFD/Imaging service bindings, and emerging technologies such as 3D Printing
- In addition, we maintain the IETF Finisher MIB, Job MIB, and Printer MIB registries, the PWG MIBs, the PWG Semantic Model schema, and handle synchronization with changes in IPP
- **Due for an update**

Errata

- Pending:
  - PWG 5100.5-2019 (Document Object v1.1): 4 issues
  - PWG 5100.6-2003 (Page Overrides v1.0): 2 issues
  - PWG 5100.8-2003 ("-actuals" v1.0): 1 issue
  - PWG 5100.9-2009 (Printer State Extensions v1.0): 2 issues
  - PWG 5100.15-2014 (FaxOut v1.0): 2 issues
  - PWG 5100.18-2015 (Infrastructure Extensions v1.0): 8 issues
  - PWG 5100.19-2015 (Implementor's Guide v2.0): 8 issues
  - PWG 5100.22-2019 (System Service v1.0): 3 issues
  - PWG 5107.3-2019 (MFD Alerts v1.1): 1 issue
- In-Progress:
  - PWG 5100.11-2010 (JPS2 - Enterprise Printing): 7 issues
  - PWG 5100.12-2015 (IPP 2.0, 2.1, and 2.2): 2 issues
  - PWG 5100.14-2020 (IPP Everywhere v1.1): 4 issues
  - PWG 5100.20-2020 (IPP Everywhere v1.1 Self-Cert): 1 issue
  - PWG 5101.1-2013 (PWG Media Standardized Names v2.0): 6 issues

IPP 2.x Fourth Edition

- Interim Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippbase23-20220809-rev.pdf

- Errata update of PWG 5100.12-2015:
  - Clarification about Get-Printer-Attributes operation
  - Definition of classes or categories of printers
  - Updated document references, including an informative reference to IPP Everywhere
  - Simplified reference tables and conformance requirements
  - New history of the development of the Internet Printing Protocol

- Prototyping Status:
  - IPP 2.0, 2.1, and 2.2 are in shipping printers; dependent specifications are prototyped separately

- Proposed Schedule:
  - Prototype draft after EPX 2.0

IPP Encrypted Jobs and Documents v1.0

- Prototype Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipptrustnoone10-20210519.pdf

- Prototyping Status:
  - Still awaiting prototyping ("help wanted")
  - Mike has started work on libcups SMIME extensions needed to support the new operations, still much to do
  - https://github.com/OpenPrinting/libcups/tree/smime

- Proposed Schedule:
  - Stable draft Q1 2024

IPP Enterprise Printing Extensions v2.0

- Prototype Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippepx20-20230206.pdf
- Prototyping Status:
  - Smith and Mike have been working on prototyping with PAPPL
  - https://github.com/wifiprintguy/pappl-epx/tree/epx-proto-libcups3-2
  - All required features implemented except for Job Release, which is "coming soon"
- Proposed Schedule:
  - Stable draft Q3 2023

IPP Everywhere v2.0

- Prototype Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve20-20221107-rev.pdf
- Major update of PWG 5100.14-2020: IPP Everywhere v1.1
  - Most RECOMMENDED items become REQUIRED
  - New CONDITIONALLY REQUIRED items
  - REQUIRE "printer-firmware-xxx" Printer Status attributes
  - REQUIRE Get-Printers from PWG 5100.22 for print servers
  - RECOMMEND IPP-USB support
- Prototyping Status:
  - Mostly in shipping printers; dependent specifications are prototyped separately
- Proposed Schedule:
  - Stable draft Q4 2023

IPP Everywhere Printer Self-Certification Manual v2.0

- Initial Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeveselfcert20-20220510.pdf
- Major update to PWG 5100.20-2020
  - Synchronize with changes in IPP Everywhere v2.0
  - Add IPP-USB support (particularly for USB-only printers)
  - Add feature tests for duplex, finishings, roll, tray
  - Add Get-Printers test for servers
- Prototyping Status:
  - Mike is working on updates to the ippeveselfcert repository
  - https://github.com/istopwg/ippeveselfcert/tree/flutter
  - Nothing to test yet
- Proposed Schedule:
  - Prototype draft and beta tools Q4 2023

ACME-Based Provisioning of IoT Devices

- Current IETF Working Draft
  - https://datatracker.ietf.org/doc/draft-sweet-iot-acme/
- Abstract:
  - This document extends the Automatic Certificate Management Environment (ACME) [RFC8555] to provision X.509 certificates for local Internet of Things (IoT) devices that are accepted by existing web browsers and other software running on End User client devices.
- Prototyping Status:
  - Mike is currently working on a prototype that will be published on Github
- Next Steps:
  - IETF IoT Operations workgroup forming a design team to discuss/develop further
    - https://datatracker.ietf.org/wg/iotops/documents/
  - Latest feedback focused on certificate lifespan and key material

PWG Media Standardized Names v2.1

- Stable Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-pwgmsn21-20230724-rev.pdf
- Errata Update of PWG 5101.1-2013: PWG Media Standardized Names v2.0 (MSN2)
  - Addresses all reported issues
  - Adds media names that have been registered since 2013
- Prototyping Status:
  - Implemented by shipping products
- IPP WG Last Call completed on August 8, 2023
  - No comments received
- Proposed Schedule:
  - PWG Call for Objections after this F2F

IPP OAuth Extensions v1.0 (OAUTH)

- Interim Draft:
  - https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippoauth10-20230725-rev.pdf
- Goals:
  - Define/reference best practices for using OAuth/OpenID with IPP
  - Prototype/deploy OAuth/OpenID support for printing
- Prototyping Status:
  - OAuth (JWT) and X.509 support code is available in libcups v3, will be ported to CUPS 2.5
  - https://github.com/OpenPrinting/libcups/tree/master
- Proposed Schedule:
  - Prototype draft Q4 2023

The Printer Working Group

Lunch Break

August 10, 2023

IPP workgroup resuming at 12:45pm ET

The Printer Working Group

IPP Workgroup Session

August 10, 2023

Before We Begin...

- PWG Antitrust Policy:
  - https://www.pwg.org/chair/membership_docs/pwg-antitrust-policy.pdf
  - The IEEE-ISTO Printer Working Group ("PWG") will not become involved in the business decisions of its Members. The PWG strictly complies with applicable antitrust laws. Every PWG meeting attendee shall comply with this policy. The PWG Officers and PWG Workgroup Officers are responsible to ensure that this policy is adhered to in all PWG activities.

- PWG Intellectual Property Policy:
  - https://www.pwg.org/chair/membership_docs/pwg-ip-policy.pdf
  - TL;DR: Anything you say in a PWG meeting or email to a PWG address can be used in a PWG Document
  - (but please do read the IP policy above if you haven't done so)

- **This meeting is being recorded to assist in preparation of minutes but will not be published**

Agenda

August 10, 2023 (US Eastern Daylight Time)

When	What
10:00 - 12:00	IDS WG
12:00 - 12:45	Lunch Break
12:45 - 13:45	IPP WG: 3D Discussions
13:45 - 14:00	IPP WG: Next Steps

3D Printing and Scanning Discussions

- Current documents:
  - PWG 5100.21-2019: IPP 3D Printing Extensions v1.1
  - PWG 5199.5-2017: PWG 3D Print Job Ticket and Associated Capabilities v1.0 (PJT3D)
  - PWG 5199.7-2019: PWG Safe G-Code Subset for 3D Printing v1.0
- Proposed future work (2023-2024):
  - IPP 3D Scan Service v1.0 specification to address 3D scanning
  - IPP 3D Production Printing Extensions v1.0 specification to address VDMA - OPC UA "Joint Working Group (JWG) for Additive Manufacturing" efforts
  - Updated PWG 3D Print Job Ticket and Associated Capabilities v2.0 (PJT3D) best practice to incorporate production extensions and IPP 3D v1.1
  - Create sample 3MF print files with embedded job tickets, do more IPP 3D prototyping

- Have a new liaison agreement with the 3MF Consortium
  - Want to create some sample 3MF print files with embedded job tickets and do more IPP 3D prototyping
  - Collaborate with 3MF and AMSC to use IPP 3D to satisfy need to query device capabilities and securely submit content for printing
- VDMA OPC UA for Additive Manufacturing - Joint Working Group 40 540
  - https://www.vdma.org/events-trade-fairs/-/event/view/70649
  - Paul Tykodi is representing the PWG in the activities of the Joint Working Group. The JWG has a potential interest in referencing IPP 3D standard for secure remote job submission

3D Meetings

- The ASTM International Conference on Additive Manufacturing (ICAM 2023): October 30 - November 3, 2023 in Washington, DC:
  - https://amcoe.org/event/icam2023/
  - Plan to attend in person
- Formnext: November 6-10, 2023 in Frankfurt, Germany
  - Additive Manufacturing Standards Forum: November 6
  - Frankfurt Am Main Germany: November 7-10
  - If IPP 3D OPC UA efforts proceed to Proof of Concept in conjunction with umati (https://umati.org/), plan to attend in person

The Printer Working Group

Next Steps

Next Steps

- IPP/2.x Fourth Edition (Mike)
  - Prototype draft in Q3/Q4 2023
- IPP Encrypted Jobs and Documents v1.0 (Mike/Smith)
  - Stable draft in Q1 2024
- IPP Enterprise Printing Extensions v2.0 (Smith)
  - Stable draft in Q3/Q4 2023
- IPP Everywhere v2.0 (Mike)
  - Stable draft in Q3/Q4 2023
- IPP Everywhere Printer Self-Certification Manual v2.0 (Mike)
  - Prototype draft in Q4 2023
- IPP OAuth Extensions v1.0 (Mike/Piotr)
  - Prototype draft in Q4 2023
- PWG Media Standardized Names v2.1 (Mike)
  - PWG Call for Objections soon

More Information

- We welcome participation from all interested parties
- IPP Working Group web page
  - https://www.pwg.org/ipp/index.html
- Subscribe to the IPP mailing list
  - https://www.pwg.org/mailman/listinfo/ipp
- IPP WG holds bi-weekly phone conferences announced on the IPP mailing list
  - Next conference calls scheduled for Thursday, August 31 and September 14, 2023 at 3pm ET