



The Printer Working Group

IPP Workgroup Session

February 4, 2025



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- **This meeting is being recorded to assist in preparation of minutes but will not be published**



February 4, 2025 (US Eastern Standard Time)

When	What
10:00 - 11:30	PWG Plenary
11:30 - 12:00	IPP WG: Status & Last Calls
12:00 - 12:45	Lunch Break
12:45 - 14:00	IPP WG: IPP Everywhere v2.0

February 5, 2025 (US Eastern Standard Time)

When	What
10:00 - 10:30	IPP WG: Envelope Media Size Names
10:30 - 11:15	IPP WG: IPP Console Extensions v1.0 (CONSOLE)
11:15 - 12.00	IPP WG: IPP Firmware Update Extensions v1.0 (FWUPDATE)
12:00 - 12:45	Lunch Break
12:45 - 13:45	IPP WG: 3D Printing Discussions
13:45 - 14:00	IPP WG: Next Steps



- Current charter:
 - <https://ftp.pwg.org/pub/pwg/ipp/charter/ch-ipp-charter-20240510.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



- **Pending:**

- PWG 5100.6-2003 (IPP Page Overrides v1.0): 2 issues
- PWG 5100.8-2003 (IPP "-actuals" v1.0): 1 issue
- PWG 5100.9-2009 (IPP Printer State Extensions v1.0): 2 issues
- PWG 5100.15-2014 (IPP FaxOut v1.0): 2 issues
- PWG 5100.19-2015 (IPP Implementor's Guide v2.0): 9 issues
- PWG 5107.3-2019 (MFD Alerts v1.1): 1 issue

- **In-Progress:**

- PWG 5100.14-2020 (IPP Everywhere v1.1): 4 issues
- PWG 5100.18-2015 (IPP Shared Infrastructure Extensions v1.0): 8 issues
- PWG 5100.20-2020 (IPP Everywhere v1.1 Self-Cert): 1 issue
- PWG 5100.22-2019 (IPP System Service v1.0): 3 issues

Working Drafts in Last Call

- **IPP Shared Infrastructure Extensions v1.1 (INFRA)**
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippinfra11-20240807.pdf>
 - Stable draft
 - Prototyped in PAPPL
 - IPP WG Last Call ends February 7, 2025 at 10pm ET
- **IPP System Service v1.1 (SYSTEM)**
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippsystem11-20241011.pdf>
 - Stable draft
 - Prototyped in PAPPL
 - IPP WG Last Call ends February 7, 2025 at 10pm ET

Other Active Working Drafts

- IPP Encrypted Jobs and Documents v1.0 (TRUSTNOONE)
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipptrustnoone10-20210519.pdf>
 - Prototype draft
 - Initial prototyping in CUPS branch, still needs work
- IPP OAuth Extensions v1.0 (OAUTH)
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippoauth10-20240624-rev.pdf>
 - Stable draft
 - Prototyped in CUPS and PAPPL
 - PWG Last Call Q1 2025
- ACME-Based Provisioning of IoT Devices:
 - <https://datatracker.ietf.org/doc/draft-sweet-iot-acme/>
 - In limbo, discussions continue on IETF SETTLE mailing list:
 - <https://mailman3.ietf.org/mailman3/lists/settle.ietf.org/>



The Printer Working Group

Lunch Break

February 4, 2025

IPP workgroup resuming at 12:45pm ET



IPP Everywhere v2.0

- Prototype draft:
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeve20-20250129-rev.pdf>
 - Prototype draft
- Major update of v1.1:
 - IPP-USB, TLS, and several more attributes required
 - Get-Printers/IPP System Service required for print servers
 - New Paid Imaging and Print to a Recipient use cases/categories/conditional requirements
 - SLP dropped as a discovery protocol
- Proposed schedule:
 - Stable draft and IPP WG Last Call Q2 2025



IPP Everywhere Printer Self-Certification Manual v2.0

- Interim draft:
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippeveselfcert20-20220510-rev.pdf>
- Major update of v1.1:
 - New GUI tools
 - Feature-based self-certification
 - More document tests
- Proposed schedule:
 - Prototype draft Q3/Q4 2025



IPP Everywhere Printer Self-Certification Process v2.0

- How to handle exceptions going forward?
 - Make the connection to Github issues explicit, add the issue number(s) to the submitted results?
 - Could we distribute updated test files between full tool releases? Then when an exception is requested due to a test issue, we can supply an updated test to resolve the exception...
-

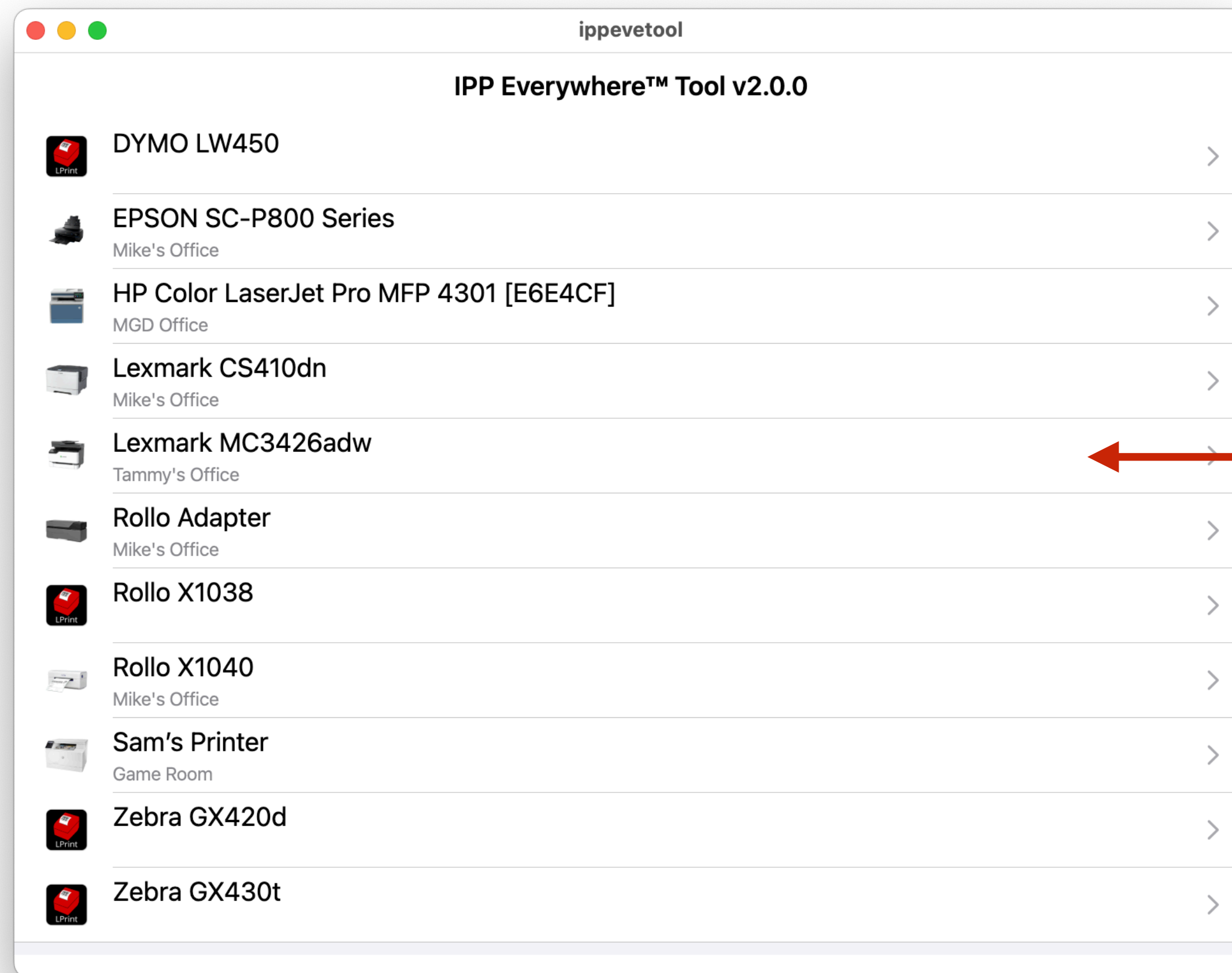


IPP Everywhere Printer Self-Certification Tools v2.0

- **Github projects:**
 - <https://github.com/istopwg/ippeveselfcert>
 - "master" branch has Flutter/Dart-based "ippevetool" to run tests (still very alpha)
 - <https://github.com/OpenPrinting/libcups>
 - Submodule of ippeveselfcert repository
 - New modular IPP tests for individual specifications handle print/no-print and required/not-required
- **Flutter-based GUI**
 - Dart for UI code, C FFI interface to libcups IPP/DNS-SD/ipptool code
 - Windows, macOS, and Linux, potential future Android + iOS/iPadOS versions
 - Discover printers/servers
 - View TXT and IPP values
 - Identify printer
 - Print files
 - Run self-certification tests
 - Run arbitrary ipptool test files

IPP Everywhere Printer Self-Certification Tools v2.0

Scroll to see
more printers

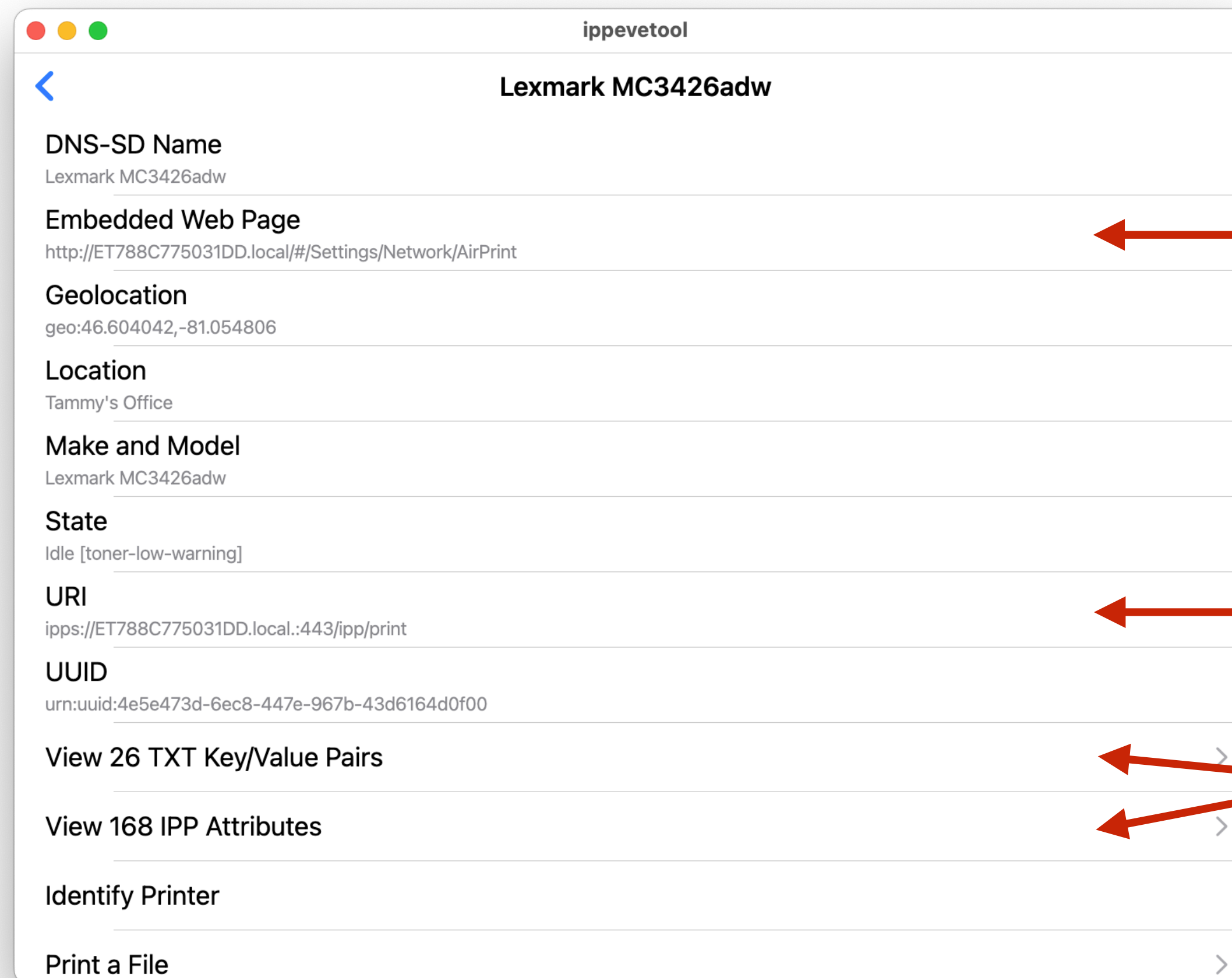


Click to view printer

Main Window

IPP Everywhere Printer Self-Certification Tools v2.0

Scroll to see
more actions



Click to view web page

Click to copy URI

Click to view

Printer Window

IPP Everywhere Printer Self-Certification Tools v2.0



Scroll to see
more values



ippevetool

Search TXT Record

Color
T

DUUID
4e5e473d-6ec8-447e-967b-43d6164d0f00

Duplex
T

Fax
T

PaperMax
<legal-A4

Scan
T

Staple
F

TLS
1.2

URF
V1.5,CP1,PQ4,W8,MT1-2-3-4-5-6-8-10-11-12-13,RS300-600,SRGB24,DM1,OB10,IS5-4-20,IFU20,FN3

UUID
4e5e473d-6ec8-447e-967b-43d6164d0f00

adminurl
http://ET788C775031DD.local.##/Settings/Network/AirPrint

air

Enter text to filter results



Click to copy
values



DNS-SD TXT Record Window



IPP Everywhere Printer Self-Certification Tools v2.0

The screenshot shows the 'ippevetool' application window with a search bar containing 'Search IPP Attributes'. Below the search bar, a list of IPP attributes is displayed, each with its name and a brief description or value:

- charset-configured**: utf-8
- charset-supported**: utf-8
- color-supported**: true
- compression-supported**: [none, gzip]
- copies-default**: 1
- copies-supported**: {lower: 1, upper: 999}
- device-service-count**: 1
- device-uuid**: urn:uuid:4e5e473d-6ec8-447e-967b-43d6164d0f00
- document-format-default**: application/octet-stream
- document-format-details-default**: {document-source-application-name: unknown, document-source-os-name: unknown, document-format: application/octet-stream, document-...}
- document-format-details-supported**: [document-source-application-name, document-source-application-version, document-source-os-name, document-source-os-version, docu...]
- document-format-preferred**

IPP Attributes Window

The screenshot shows the 'ippevetool' application window with a search bar containing 'media'. The list of attributes is filtered to show only those related to media:

- job-constraints-supported**: {resolver-name: duplex_envelope, sides: [two-sided-long-edge, two-sided-short-edge], media-col: {media-type: envelope}}
- job-creation-attributes-supported**: [compression-supplied, copies, date-time-at-completed, date-time-at-creation, date-time-at-processing, document-format-details-supplied, d...]
- job-media-sheets-supported**: {lower: 1, upper: 2147483647}
- job-resolvers-supported**: {resolver-name: duplex_envelope, sides: one-sided, media-col: {media-type: stationery}}
- media-bottom-margin-default**: 423
- media-bottom-margin-supported**: 423
- media-col-database**: [{media-source-properties: {media-source-feed-direction: short-edge-first, media-source-feed-orientation: 3}, media-size: {x-dimension: 984...}
- media-col-default**: {media-source-properties: {media-source-feed-direction: short-edge-first, media-source-feed-orientation: 3}, media-size: {x-dimension: 2159...}
- media-col-ready**: {media-source-properties: {media-source-feed-direction: short-edge-first, media-source-feed-orientation: 3}, media-size: {x-dimension: 2159...}
- media-col-supported**: [media-size, media-top-margin, media-bottom-margin, media-left-margin, media-right-margin, media-source, media-type]
- media-default**: na_letter_8.5x11in
- media-left-margin-default**

IPP Attributes Window w/Filter

IPP Everywhere Printer Self-Certification Tools v2.0



The screenshot shows the 'Print a File' window in the 'ippevetool' application. The window has a title bar with three colored buttons (red, yellow, green) and the text 'ippevetool'. Below the title bar, the window title is 'Print a File'. The main content area contains several settings:

- Filename:** A text input field with a right-pointing chevron.
- Format:** A dropdown menu currently set to 'Auto-Detect' with a right-pointing chevron.
- Job Ticket:** A section header.
- Title:** A text input field containing 'Untitled'.
- Copies:** A numeric input field with a value of '1' and minus/plus buttons.
- Media:** A dropdown menu currently set to 'US Letter' with a right-pointing chevron.
- 2-Sided Printing:** A dropdown menu currently set to 'Off' with a right-pointing chevron.
- Print Mode:** A dropdown menu currently set to 'Color' with a right-pointing chevron.
- Finishings:** A dropdown menu currently set to 'None' with a right-pointing chevron.

Red arrows point to the following elements:

- Click to cancel:** Points to the back arrow in the top left corner.
- Click to submit job:** Points to the 'Print' button in the top right corner.
- Click to select file:** Points to the chevron next to the 'Filename' field.
- Click to select format:** Points to the chevron next to the 'Format' dropdown.
- Click to change settings:** Points to the chevrons next to the 'Media', '2-Sided Printing', 'Print Mode', and 'Finishings' dropdowns.
- Scroll to see more options:** A vertical double-headed arrow on the left side of the window.

Print Window



The Printer Working Group

IPP Workgroup Session

February 5, 2025



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13:45 - 14:00	IPP WG: Next Steps

Envelope Media Size Names

- Current envelope media size names are "flap agnostic"
 - No way to know whether the flap is on the short edge ("portrait") or long edge ("landscape") based on the name
 - Normally we do not distinguish media variants (type/color/etc.) in the media size name
 - The localized name normally indicates that certain sizes are envelopes, but not where the flaps go, etc.
 - Except for roll-fed media, media size names are always expressed in portrait orientation (width < length)
- Japanese envelope sizes are explicit about flap location
 - "You" sizes have the flap on the long edge
 - "Kakugata" sizes have the flap on the short edge
- ISO 269:1985 defines the C-series envelope sizes
 - **This standard has been withdrawn by the ISO!**
 - This 4-page (including boilerplate) standard defines the C0 through C8 sizes as well as two "types" of envelopes: banker shape when the flap is on the long edge and pocket shape when the flap is on the short edge

Envelope Media Size Names (con't)

- The policy in section 5 of PWG 5101.1-2023 specifies that only one media size name be registered for a particular width and length:
 - <https://ftp.pwg.org/pub/pwg/candidates/cs-pwgmsn21-20230915-5101.1.pdf#page=18>
- The current "media-col" Job/Document Template collection member attributes do not provide intent for the envelope flap location
- Some sizes historically have a "standard" flap location
 - Long edge:
 - ISO DL
 - US #8 (Personal), Monarch, #9, #10, #11, #12, and #14
 - JIS You 4 and 6
 - Short edge:
 - Japanese Chou 2, 3, 4, and 40
 - Japanese Kakugata 1, 2, 3, 4, 5, and 8

Envelope Sizes: Solutions

- Many IPP clients localize sizes based on their dimensions
 - Two media with the same dimensions are treated as a single size
 - Two media with portrait and landscape dimensions are treated as two sizes, landscape size currently show with "dimensional" name (e.g. "235x120mm" instead of "You Chou 3")
- Extend "media" size names:
 - Add envelope size names in PWG 5101.1 as needed with corresponding long-edge flap sizes:
 - "jpn_you2_162x114mm" Japanese You 2
 - "jpn_youchou3_235x120mm" for the long edge version of "jpn_chou3_120x235mm"
 - "iso_NAME-long-edge_LxWmm" to the long edge versions of "iso_NAME_WxLmm"
 - Provide guidance - landscape dimensions for long edge flap envelope sizes, "NAME-long-edge" unless a exclusively a national size
- Extend "media-col" member attributes:
 - Landscape "media-size" dimensions
 - "media-source-properties" specifies location of envelope flap: "media-source-feed-orientation" for flap location (top of envelope as viewed) and "media-source-feed-direction" for short/long edge.
- Contact IPP client developers to add localizations for new envelope sizes



IPP Console Extensions v1.0 (CONSOLE)

- Interim draft:
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippconsole10-20250127.pdf>
- Registration for exposing SNMP prtConsole values and the printer's embedded web server "home page"
- Proposed schedule:
 - Prototype draft Q1/Q2 2025
- Goals:
 - Support remote monitoring of the console text and indicator lights
 - Provide a vendor-neutral URL for the embedded web interface



IPP Firmware Update Extensions v1.0 (FWUPDATE)

- Interim draft:
 - <https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippfwupdate-20241024-rev.pdf>
- Registration for monitoring and managing firmware updates
- Proposed schedule:
 - Prototype draft Q1/Q2 2025
- Goals:
 - Good user experience
 - Simple Client interface
 - Secure/safe updates



The Printer Working Group

Lunch Break

February 5, 2025

IPP workgroup resuming at 12:45pm ET

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
- **Discussion:**
 - America Makes Spring TRX and RAPID+TCT



America Makes Spring TRX and RAPID+TCT

- America Makes Spring TRX and RAPID+TCT 2025
 - April 8-10 in Detroit, MI
 - Should we send someone (Paul?) to attend?



The Printer Working Group

Next Steps

Next Steps

- **IPP Console Extensions v1.0 (Mike)**
 - IPP WG Last Call in Q1/Q2 2024
- **IPP Firmware Update Extensions v1.0 (Smith)**
 - IPP WG Last Call in Q1/Q2 2024
- **IPP OAuth Extensions v1.0 (Mike/Piotr)**
 - PWG Last Call in Q1 2025
- **IPP Shared Infrastructure Extensions v1.1 (Mike)**
 - PWG Call for Objections in Q1 2025
- **IPP System Service v1.1 (Mike)**
 - PWG Call for Objections in Q1 2025
- **IPP Everywhere v2.0/Printer Self-Certification Manual v2.0/Self-Certification Tools v2.0**
 - Restart development Q1/Q2 2025



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, February 27 and March 13, 2025 at 3pm ET