The Printer Working Group

PWG 2022 State of the Union

Smith Kennedy, PWG Vice Chair
February 17, 2022

- Imaging Device Security (IDS) Workgroup
  - Status and Activities

- PWG Internet Printing Protocol (IPP) Workgroup
  - Core IPP Specifications
  - Recently Approved or Updated PWG Specifications
  - PWG IPP Work In Progress

- Q & A

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Imaging Device Security (IDS) Workgroup

PWG Imaging Device Security

- Secure the Client and Printer to establish and maintain customer faith in the printing ecosystem
  - Protecting communications
  - Protecting information stored at rest

- Define standards and guidelines to make the imaging device (printer) and the act of printing more trusted
  - Protects User Data (document content), Printer data (job ticket) and TSF Data (login credentials, encryption keys)
  - Defines requirements for data access and transport security

- PWG Hardcopy Device Security Guidelines v1.0 (HCDSEC):
  - https://ftp.pwg.org/pub/pwg/ids/wd/wd-idshcdsec10-20201101.pdf

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Internet Printing Protocol (IPP) Workgroup

Core IPP Specifications

Lines in RED have updates pending; lines in BLUE were ratified in the last 2 years

- IETF STD 92: IPP/1.1 (RFC 8010 and RFC 8011)
- PWG 5100.12-2015: IPP Version 2.0, 2.1, and 2.2

- PWG 5100.1-2017: IPP Finishings 2.1 (FIN)
- PWG 5100.3-2001: Production Printing Attributes – Set 1
- PWG 5100.7-2019: IPP Job Extensions v2.0 (JOBEXT)
- PWG 5100.11-2010: IPP: Job and Printer Extensions - Set 2 (JPS2)
- PWG 5100.13-2012: IPP: Job and Printer Extensions – Set 3 (JPS3)
- PWG 5100.14-2020: IPP Everywhere™ v1.1
  - PWG 5100.20-2020: IPP Everywhere™ Printer Self-Certification Manual v1.1 (SELFCERT)
- PWG 5100.15-2014: IPP FaxOut Service
- PWG 5100.16-2020: IPP Transaction-Based Printing Extensions v1.1
- PWG 5100.17-2014: IPP Scan Service
- PWG 5100.18-2015: IPP Shared Infrastructure Extensions (INFRA)
- PWG 5100.19-2015: IPP Implementor's Guide v2.0 (IG)
- PWG 5100.22-2019: IPP System Service v1.0 (SYSTEM)
- PWG 5101.1-2013: PWG Media Standardized Names 2.0
- PWG 5102.4-2012: PWG Raster Format

IPP Everywhere™ Certified Printers

- https://www.pwg.org/ipp/everywhere.html

- **768** printers now certified!
  - https://www.pwg.org/printers/
  - More on the way!

- IPP Everywhere™ Self Certification v1.1 Update 3
  → Released May 17, 2021; approved June 16, 2021
  → Mandatory for certification starting July 1, 2021
     → IPP Everywhere v1.0 Certifications no longer accepted

- IPP Everywhere™ Self Certification 1.1 Update 4
  - Beta release imminent

- IPP Everywhere v2.0 scoping and requirements in active development in IPP Workgroup

Recently Approved

- 2019
  - PWG 5100.22-2019: IPP System Service v1.0 (SYSTEM)
  - PWG 5199.10-2019: IPP Authentication Methods v1.0
  - PWG 5100.7-2019: IPP Job Extensions v2.0 (JOBEXT)

- 2020
  - PWG 5100.14-2020: IPP Everywhere™ v1.1
  - PWG 5100.20-2020: IPP Everywhere™ Printer Self-Certification Manual v1.1 (SELFCERT)
  - PWG 5100.16-2020: IPP Transaction-Based Printing Extensions v1.1

- 2021
  - PWG 5199.11-2021: Job Accounting with IPP v1.0
  - Deprecating IPP Print by Reference v1.0 Registration

Work in Progress 2021-2022

- IPP Finishings v3.0
  - In Workgroup Last Call - Approval likely by May 2022

- IPP Encrypted Jobs and Documents v1.0
  - Stable draft in Q1 2022

- IPP Production Printing Extensions v2.0
  - Stable draft in Q4 2021

- IPP Enterprise Printing Extensions v2.0
  - Stable draft in Q4 2021

- IPP Driverless Printing Extensions v2.0
  - Prototype draft in Q4 2021

- Internet Printing Protocol/2.x Fourth Edition
  - Stable draft in Q1 2022

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Work in Progress 2022: Details

IPP Finishings 3.0

- Updating PWG 5100.1-2017
- Status: Stable Draft in Workgroup Last Call; expected to be approved in April / May 2022
- Changes
  - Finishings v2.1 Errata resolutions
  - Requirements made more strict (hence v2.1 → v3.0)
    - "finishings-col" / "finishings-col-database" / "finishings-col-ready" Printer support now REQUIRED

  - Received from IPP Job and Printer Extensions – Set 3 [PWG 5100.13-2012]
    - "finishings" enum values: 'trim-after-pages', 'trim-after-documents', 'trim-after-copies' and 'trim-after-job'

  - Latest draft: https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippfinishings30-20220207.pdf

IPP Encrypted Jobs and Documents v1.0 (TRUSTNOONE)

- Defines new encrypted IPP message formats and operations that provide IPP with end-to-end encryption of IPP Job attributes, Document attributes, and Document data
  - Currently proposal uses S/MIME 4.0
  - Can also use PGP
- Status: Awaiting Prototype
- Latest draft: https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ipptrustnoone10-20210519.pdf

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IPP Production Printing Extensions v2.0 (PPX)

- Updating PWG 5100.3-2001
- Status: Awaiting Prototype
- Changes
  - Added
    - "image-orientation"
    - "date-time-at-completed-estimated", "date-time-at- processing-estimated", "time-at-completed-estimated", and "time-at-processing- estimated"
    - "job-complete-before" and "job-complete-before-time"
  - New Requirements
    - Required:
      - "insert-sheet", "job-error-sheet", "job-message-to-operator", "job-sheet- message", "page-delivery", "separator-sheets", "x-image-position", "x-image-shift", "x-side1-image-shift", "x-side2-image-shift", "y-image-position", "y-image-shift", "y- side1-image-shift", and "y-side2-image-shift"
    - Deprecated
      - "job-accounting-sheets", "media-input-tray-check", "presentation-direction-number-up" / "presentation-direction-number-up-default" / "presentation-direction-number-up-supported"
    - Obsolete
      - "page-order-received" / "page-order-received-default" / "page-order-received-supported", "current-page-order", "insert-after-page-number-supported", "job-accounting-output-bin-default", "job-recipient-name-default", and "user-defined-values-supported"
  - Moved to IPP Finishings 2.1 [PWG 5100.1-2017]
    - "finishings-col"
  - Moved to IPP Job Extensions v2.0 [PWG 5100.7]
    - "job-account-id", "job-accounting-user-id", "job-sheets-col", and "media-col"

- Latest draft: https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippppx20-20211020.pdf

IPP Enterprise Printing Extensions v2.0 (EPX)

- Updating PWG 5100.11-2010
- Status: Awaiting Prototype
- Changes
  - New Features
    - Job Storage feature (section 4.2), which provides "stored jobs" with more clearly defined semantics than the legacy Job Save and Reprint feature (now OBSOLETE)
    - Job Proof and Suspend feature (section 4.4.1) provides a simpler proof printing solution that is more congruent with vendor proof printing implementations already in the marketplace, replacing the legacy Job Proof Print feature (section 4.4.2), which is now DEPRECATED
    - Job Release feature (section 4.1) extends the legacy Secure Print feature and now interoperates with the Job Storage and Job Proof and Suspend feature to better support complex enterprise print workflow solutions
    - The Job Print Policy feature (section 4.3) was added by adopting the Get-User-Printer-Attributes operation registered in 2017;

  - Moved to IPP Job Extensions v2.0 [PWG5100.7]
    - Many attributes and keywords (see slide 10) because they don't specifically apply to the new "enterprise printing" focus of this specification

  - Moved to IPP Production Printing Extensions v2.0 (PPX)
    - "job-phone-number", "job-phone-number-default", "job-phone-number-supported", "job-recipient-name", "job-recipient-name-default", and "job-recipient-name-supported"

- Latest draft: https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippepx20-20211101.pdf

IPP Driverless Printing Extensions v2.0 (NODRIVER)

- Updating PWG 5100.13-2012
- Status: Awaiting Prototype
- Changes
  - New Features
    - Job Presets adopted from the registration document where it was originally defined
    - Print Quality extends presets to support vendor print quality color customization
    - Color Modes support Printer color transformations with client-side previews
    - Message Catalog extensions to allow the Printer to supply "tooltips" and inline links to external help resources
    - "client-info" - replaces "document-format-details" for reporting client accounting information
    - Other minor enhancements

  - Received from IPP Transaction Based Printing Extensions (TRANS) [PWG5100.16-2013]
    - "jpeg-k-octets-supported", "jpeg-x-dimension-supported", "jpeg-y- dimension-supported", "pdf-k-octets-supported", "pdf-versions-supported", "print- scaling-default", "print-scaling-supported", "printer-dns-sd-name", and "printer-kind"

- Latest draft: https://ftp.pwg.org/pub/pwg/ipp/wd/wd-ippnodriver20-20220207.pdf