

IPP Printer State Extensions

IPP Working Group

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Maui

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IPP PSX Background / Rationale

- BMLinkS, a consortium of printer vendor in Japan, requested support for additional values for “printer-state-reasons”
 - **Additional values needed to support finishing options**
- Current “printer-state-reasons” attribute in IPP does not include needed values for secure monitoring of printers
 - **The first definition of the "printer-state-reasons" attribute of the IPP Printer object was published in IPP/1.1 (RFC 2911)**
 - **The mapping of printer device and printer subunit alerts defined in the 'PrtAlertCodeTC' textual convention in IANA Printer MIB (originally published in RFC 3805) was very sparse (less than 20% coverage)**
- IPP w/ TLS (including PSX extension) offers improved security over SNMP

IPP PSX Objectives

- **Develop a "IPP Printer State Reasons Extensions" PWG Candidate Standard**
 - **Define new values for the IPP/1.1 (RFC 2911) "printer-state-reasons" attribute for:**
 - Every printer device and printer subunit alert defined in the 'PrtAlertCodeTC' textual convention in IANA Printer MIB
 - Every finishing device defined in the 'FinDeviceTypeTC' textual convention in IANA Finisher MIB
 - **Define a new "printer-alert" attribute that encodes all of the eight machine-readable columnar objects defined in the 'prtAlertTable'**
 - **Define a new "printer-alert-description" attribute that encodes the one localized object 'prtAlertDescription' defined in the 'prtAlertTable'**

IPP PSX WG Activities

- Working Draft
 - <ftp://pwg.org/pub/pwg/ipp/wd/wd-ippstate10-20061107.pdf>
- BMLinkS Feedback
 - BMLinkS has confirmed current proposal “for our first request is enough”
- Drafts sent to UP3i
 - for UP3i review and possible application in UP3i Finishing standards
- Before a PWG Last Call at least one prototype is needed (need not be comprehensive)

IPP PSX Milestones / Next Steps

- **Charter Phase**
 - C-1. DONE - 'Initial' draft of IPP PSX Charter – 25 May 2006
 - C-2. DONE - 'Stable' draft of IPP PSX Charter – 1 June 2006
 - C-3. DONE - PWG SC approval of IPP PSX Charter – 1 June 2006
- **Definition Phase**
 - D-1. DONE - 'Initial' draft of PWG IPP PSX – 17 July 2006
 - D-2. DONE - 'Prototype' draft of PWG IPP PSX – 7 November 2006
 - D-3. Prototyping reports on PWG IPP PSX – April 2007
 - D-4. 'Stable' draft of PWG IPP PSX – May 2007
 - D-5. PWG Last Call of PWG IPP PSX – June 2007
 - D-6. PWG Formal Approval of PWG IPP PSX – July 2007
 - D-7. IANA registration of PWG IPP PSX updates – August 2007
- **Implementation Phase**
 - I-1. Interoperability Event for PWG IPP PSX – September 2007

IPP PSX Spec Overview

- **Section 3 – Industry Standard Printing Model**
 - derived from ISO DPA, Printer MIB, and IPP
- **Section 4 – Requirements**
 - Rationale – derived from RFC 2567, 2568, 2911, 3805, and 3806
 - Use Models – derived from RFC 2911
 - Design Requirements – derived from Use Models
- **Section 5 – IPP Printer Attributes**
 - printer-state-reasons – new specific and generic values
 - printer-alert – machine-readable structured strings (w/ ABNF)
 - printer-alert-description – human-readable localized strings
- **Section 6 – IANA Printer MIB**
 - PrtAlertCodeTC – new values for finishing devices
- **Appendix A – Design Alternatives**
 - Rationale for “the road not taken”

IPP PSX Spec Details

- **IPP/1.1 (RFC 2911, September 2000)**
 - **printer-state-reasons (1setOf text(MAX))**
 - 18 valid mappings – of 92 specific values
 - 12 ambiguous legacy mappings – of 92 specific values
 - 0 generic mappings – of 30 subunit generic values
- **IPP PSX (Draft, 7 November 2006)**
 - **printer-state-reasons (1setOf text(MAX))**
 - 92 valid mappings – of 92 specific values
 - 12 DEPRECATED legacy mappings – of 92 specific values
 - 30 generic mappings – of 30 subunit generic values
 - 510 finishing mappings – for 17 finishing devices
 - **printer-alert(1setOf octetString(MAX))”**
 - machine-readable US-ASCII encoding of eight Printer MIB objects
 - **printer-alert-description(1setOf text(MAX))**
 - human-readable localized encoding of one Printer MIB object
 - **PrtAlertCodeTC in IANA-Printer-MIB (from RFC 3805)**
 - 510 new specific values – for 17 finishing devices

IPP PSX Latest Spec Changes

- 7 November 2006 (v0.40)
 - Changed document status from 'Interim' to 'Prototype';
 - Revised section 5.1.1 'Severity Suffixes Interoperability' for clarity;
 - Revised Table 1 in section 5.1.2 'Existing Printer State Reasons for Alert Codes' to DEPRECATE all non-specific legacy one-way mappings;
 - Revised Table 2 in section 5.1.3 'New Printer State Reasons for Alert Codes' to DELETE all non-specific legacy one-way mappings;
 - Revised Table 3 in section 5.2.1 'Keywords for Alert Objects' conformance levels, to align with bindings of 'printerV2Alert' in Printer MIB, section 9 of IPP Event Notifications and Subscriptions [RFC3995], and WIMS-CIM work-in-progress mapping of Printer MIB;
 - Revised section 5.2.2. 'Printer Alert Encoding of Alert Objects' to specify explicit charset [US-ASCII], reference specific objects in 'prtAlertTable', and clarify mapping details in ABNF expressions;
 - Revised section 5.3.1 'Printer Alert Description Encoding' to specify REQUIRED copy of natural language tag and REQUIRED charset conversion to the value of "charset-configured" (i.e., current site policy)

IPP PSX Latest Spec Changes

- 7 November 2006 (v0.40) - continued
 - Revised section 6.1.1 'New Alert Codes for Finishing Subunits' to define complete set based on subunit generic alerts for every device;
 - Added new section 6.1.2 'Conventions for Alert Code Numbering' to explain conventions from Printer MIB and extensions in this document;
 - Revised section 7 'Conformance Requirements' to add explicit lists of of detailed conformance sections in this specification;
 - Added new section 8.2 'IPP Printer Attributes - IANA Registrations' to register "printer-alert" and "printer-alert-description" with IANA; - Revised section 9 'Internationalization Considerations' to reflect new "printer-alert" and "printer-alert-description" attributes;
 - Revised section 10 'Security Considerations' to add details;
 - Added new section 15.6 'Printer Alert Subset for Finishing Subunits' to explain changed strategy to complete set of specific alerts.

IPP PSX Documents

- PWG Plenary Slides – Maui
<ftp://ftp.pwg.org/pub/pwg/ipp/slides>
- ipp-psx-slides-plenary-20070220.ppt/pdf
- IPP Working Group Slides – Maui
<ftp://ftp.pwg.org/pub/pwg/ipp/slides>
- ipp-psx-slides-details-20070219.ppt/pdf
- IPP PSX Latest Spec – Prototype status
<ftp://ftp.pwg.org/pub/pwg/ipp/wd>
- wd-ippstate10-20061107.htm/pdf
- IPP Working Group – Contact Information
<http://www.pwg.org/ipp> (web page)
<ftp://ftp.pwg.org/pub/pwg/ipp/wd> (working drafts)
<mailto:ipp@pwg.org> (mailing list – subscribers only)
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