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White Paper

The Printer Working Group

IPP "preset-col" Attribute (PRESET)

Status: Initial

Abstract: This document is a whitepaper that describes IPP Settings Triggers, a mechanism to allow the selection of one setting choice to cause other related settings choices to be chosen at the same time.

This document is a White Paper. For a definition of a "White Paper", see: http://ftp.pwg.org/pub/pwg/general/pwg-process30.pdf

This document is available electronically at:

https://ftp.pwg.org/pub/pwg/ipp/whitepaper/tb-ipp-preset-20170418.odt
https://ftp.pwg.org/pub/pwg/ipp/whitepaper/tb-ipp-preset-20170418.pdf

Title: IPP "preset-col" Attribute *(PRESET)*

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1 Introduction

This whitepaper introduces the notion of settings groups or “presets” to the IPP protocol and ecosystem.

2 Terminology

2.1 Protocol Roles Terminology

This document defines the following protocol roles in order to specify unambiguous conformance requirements:

Client: Initiator of outgoing IPP session requests and sender of outgoing IPP operation requests (Hypertext Transfer Protocol -- HTTP/1.1 [RFC7230] User Agent).

Printer: Listener for incoming IPP session requests and receiver of incoming IPP operation requests (Hypertext Transfer Protocol -- HTTP/1.1 [RFC7230] Server) that represents one or more Physical Devices or a Logical Device.

2.2 Other Terms Used in This Document

User: A person or automata using a Client to communicate with a Printer.

2.3 Acronyms and Organizations

IANA: Internet Assigned Numbers Authority, http://www.iana.org/

IETF: Internet Engineering Task Force, http://www.ietf.org/

ISO: International Organization for Standardization, http://www.iso.org/

PWG: Printer Working Group, http://www.pwg.org/

3 Rationale for IPP "preset-col" Attribute

There are cases where a particular settings choice chosen by the User logically should then lead to other choices being made as well. As a simple example, if the User changes the selected media size to 4”x6”, that size is usually used with a particular photo media type, and also typically implies setting the print quality to 'best'. There is currently no mechanism in IPP to create associations between these related settings. This leaves the burden on the User to make all these changes, which visually may be in different panels in a print dialog.

3.1 Use Cases

Provide use cases for the document in subsections using the casual use case format.

3.1.1 Photo Media Selected

Kelli is in the process of printing a photo. In the print dialog, she switches the selected media from A4 to 4”x6”. The Printer has indicated that the 4”x6” media size is associated with a glossy photo media type, and 'best' print quality. The Client updates the print dialog and the job ticket to reflect those changes. Kelli is pleased that these choices were made automatically, saving her time and effort.

3.2 Exceptions

Provide exceptions for the use cases using the casual use case format.

3.3 Out of Scope

The following are considered out of scope for this document:

1. User presentation of these options
2. Changes to the core IPP specifications

3.4 Design Requirements

The design requirements for this document are:

1. Define extensions to IPP to allow a collection of attribute values to be specified that will be chosen as a group when either a particular attribute value is chosen as a “trigger”, or as a named “preset group”.
2. Define a container for those collections
3. Register all attributes and operations with IANA

4 Technical Solutions/Approaches

This white paper defines the “preset-col” attribute, that specifies a group of attributes and attribute values with an associated label and “trigger”, whose match causes the group of attribute values to be applied. This is functionally similar to the “job-constraints-supported” and “job-resolvers-supported” attributes [PWG5100.13], but the latter attributes don't appear to meet all the needs of this application. The “job-constraints-supported” attribute lacks a named label, which could be added, but isn't really applicable to the “constraints / resolvers” system. Additionally, there is a risk that Clients that support IPP constraints might not support the use of IPP constraints in this “positive constraint” manner.

5 Printer Description Attributes

5.1 “preset-col” (collection)

The “preset-col” attribute is a collection attribute that specifies a group of attributes and/or attribute values to be declared. This group can have a label or name that may be localized for user presentation. The group can also specify a “trigger”, which is a single attribute and value. If a supporting Client detects that the User has selected this attribute value, that triggers the application of the other values to their corresponding attributes in the current job ticket.

Table 1 lists the "preset-col" member attributes. The order of values supplied in the "finishings-col" attribute is not significant.

Member Attribute	Client Support	Printer Support
preset-label (name(MAX))		
preset-trigger (collection)		
preset-attribute-values (collection)		

Table 1 : "preset-col" Member Attributes and support requirements

5.1.1 “preset-label” (name(MAX))

The “preset-label” member attribute provides a non-localized name for the “preset-col” collection. The value SHOULD be unique to allow Clients to localize them using the language-specific strings file referenced by the "printer-strings-uri" Printer attribute [PWG5100.13]. It SHOULD be descriptive so that it might be used without localization.

5.1.2 “preset-trigger” (collection)

The “preset-trigger” member attribute is an optional member attribute of “preset-col”. The “preset-trigger” attribute is a collection that specifies the attribute name and value that can

trigger the selection of this preset. Each collection consists of a “preset-trigger-name (name(MAX))” member attribute plus one Job Template attributes and its value that will cause the selection of this preset. The name specified by “preset-trigger-name” MAY be localized using the value of “preset-trigger-name” as the key into the strings catalog provided at the URL specified by “printer-strings-uri” [PWG5100.13].

5.1.3 “preset-attributes” (1setOf attribute)

The “preset-attributes” member attribute is the set of attributes and values that MUST be set when this “preset-col” has been selected or its trigger has been matched.

5.2 “preset-col-set” (1setOf collection)

The “preset-col-set” attribute is a container for conveying the set of “preset-col” collections recommended by the Printer.

6 Internationalization Considerations

For interoperability and basic support for multiple languages, implementations use the Universal Character Set (UCS) Transformation Format -- 8 bit (UTF-8) [RFC3629] encoding of Unicode [UNICODE] [ISO10646] and the Unicode Format for Network Interchange [RFC5198].

7 Security Considerations

Provide security considerations for this document.

8 References

[ISO10646] "Information technology -- Universal Coded Character Set (UCS)", ISO/IEC 10646:2011

[PWG5100.12] R. Bergman, H. Lewis, I. McDonald, M. Sweet, "IPP/2.0 Second Edition", PWG 5100.12-2011, February 2011, http://ftp.pwg.org/pub/pwg/candidates/cs-ipp20-20110214-5100.12.pdf

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[RFC2817] R. Khare, S. Lawrence, “Upgrading to TLS Within HTTP/1.1”, RFC 2817, May 2000, https://www.ietf.org/rfc/rfc2817.txt

[RFC3629] F. Yergeau, “UTF-8, a transformation format of ISO 10646”, RFC 3629, November 2003, https://www.ietf.org/rfc/rfc3629.txt

[RFC5198] J. Klensin, M. Padlipsky, “Unicode Format for Network Interchange”, RFC 5198, March 2008, https://www.ietf.org/rfc/rfc5198.txt

[RFC7230] R. Fielding, J. Reschke, "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", RFC 7230, June 2014, http://www.ietf.org/rfc/rfc7230.txt

[RFC8010] M. Sweet, I. McDonald, “Internet Printing Protocol/1.1: Encoding and Transport”, RFC 8010, January 2017, https://www.ietf.org/rfc/rfc8010.txt

[RFC8011] M. Sweet, I. McDonald, “Internet Printing Protocol/1.1: Model and Semantics”, RFC 8011, January 2017, https://www.ietf.org/rfc/rfc8011.txt

[UNICODE] The Unicode Consortium, “The Unicode Standard, Version 6.2.0”, ISBN 978-1-936213-07-8, September 2012, http://www.unicode.org/versions/Unicode6.2.0/

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10 Change History

10.1 April 18, 2017

Initial revision.

