



Project of the PWG-IPP Working Group

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# Internet Printing Protocol (IPP): “finishings” attribute values extension

Draft D0.8  
October 30, 2000

[ftp://ftp.pwg.org/pub/pwg/ipp/new\\_VAL/pwg-ipp-finishings-fold-trim-bale-001030-rev.doc](ftp://ftp.pwg.org/pub/pwg/ipp/new_VAL/pwg-ipp-finishings-fold-trim-bale-001030-rev.doc), .rtf, .pdf

## Abstract

This document specifies the additional enum values ‘fold’, ‘trim’, ‘bale’, ‘booklet-maker’, ‘jog-offset’, ‘bind-left’, ‘bind-top’, ‘bind-right’, and ‘bind-bottom’ for the IPP “finishings” Job Template attribute for use with the Internet Printing Protocol/1.0 (IPP) [RFC2566, RFC2565] and Internet Printing Protocol/1.1 (IPP) [RFC2911, RFC2910]. This attribute permits the client to specify additional finishing options, including values that include a specification of a coordinate system for the placement of finishings operation with respect to the corners and edges of portrait and landscape documents.

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TABLE OF CONTENTS

1 Introduction.....4

1.1 Problem .....4

1.2 Solution .....4

2 Complete “finishings” Job Template attribute definition.....5

3 Conformance Requirements .....7

4 IANA Considerations .....7

5 Internationalization Considerations .....7

6 Security Considerations .....7

7 References.....7

8 Author’s Addresses.....8

9 Appendix A: Summary of other IPP documents .....9

10 Appendix B: Description of the IEEE Industry Standards and Technology (ISTO) .....10

11 Appendix C: Description of the IEEE-ISTO PWG .....10

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## 66 1 Introduction

### 67 1.1 Problem

68 Need additional enum values for finishing to specify which of four corners to put a single staple, which of  
69 four edges to put two staples, which of four edges to bind, and generic values for the following: fold, trim,  
70 bale, saddle stitch, edge stitch, signature booklet maker and jog-offset.

### 71 1.2 Solution

72 The coordinate system scheme agrees with the Finisher MIB which in turn follows the ISO DPA approach  
73 of using a coordinate system as if the document were portrait. The approach for coordinate system being  
74 relative to the intended reading direction depends on the device being able to understand the orientation  
75 embedded in the PDL, which is too problematic for many PDLs. The approach for the coordinate system  
76 of being relative to the media feed direction is too dependent on the way the device is currently set up, i.e.,  
77 pulling short edge first vs. long edge first, and can vary between different output-bins in the same device.

78 Additional (new) symbolic names of these enum values are:

79	fold
80	trim
81	bale
82	booklet-maker
83	jog-offset
84	bind-left
85	bind-top
86	bind-right
87	bind-bottom

88

89 Although not a part of this specification, more specific values for saddle-stitch and fold could be considered  
90 once adequate definitions have been developed. Some examples are:

91	saddle-stitch-single-long
92	saddle-stitch-single-short
93	saddle-stitch-dual-long
94	saddle-stitch-dual-short
95	fold-in-half-long
96	fold-in-half-short
97	fold-in-thirds-long
98	fold-in-thirds-short
99	fold-z-long
100	fold-z-short

101

## 102 2 Complete “finishings” Job Template attribute definition

103 *Note: [RFC2911] defines generic enum values: 3-9 and more-specific stitching and stapling enum values:*  
 104 *20-31. This document defines generic enum values: 10-14 and more specific binding enum values: 50-53.*  
 105 *The entire definition of “finishings” from [RFC2911] section 4.2.6 is reproduced here verbatim with the*  
 106 *addition of the new enum values for the convenience of the reader.*

### 107 4.2.6 finishings (1setOf type2 enum)

108 This attribute identifies the finishing operations that the Printer uses for each copy of each printed  
 109 document in the Job. For Jobs with multiple documents, the “multiple-document-handling” attribute  
 110 determines what constitutes a “copy” for purposes of finishing.

111 Standard enum values are:

112 Value	Symbolic Name and Description
113	
114 '3'	'none': Perform no finishing
115 '4'	'staple': Bind the document(s) with one or more staples. The exact number and placement 116 of the staples is site-defined.
117 '5'	'punch': This value indicates that holes are required in the finished document. The exact 118 number and placement of the holes is site-defined The punch specification MAY be 119 satisfied (in a site- and implementation-specific manner) either by drilling/punching, 120 or by substituting pre-drilled media.
121 '6'	'cover': This value is specified when it is desired to select a non-printed (or pre-printed) 122 cover for the document. This does not supplant the specification of a printed cover 123 (on cover stock medium) by the document itself.
124 '7'	'bind': This value indicates that a binding is to be applied to the document; the type and 125 placement of the binding is site-defined.
126 '8'	'saddle-stitch': Bind the document(s) with one or more staples (wire stitches) along the 127 middle fold. The exact number and placement of the staples and the middle fold is 128 implementation and/or site-defined.
129 '9'	'edge-stitch': Bind the document(s) with one or more staples (wire stitches) along one edge. 130 The exact number and placement of the staples is implementation and/or site- 131 defined.
132 '10'	'fold': Fold the document(s) with one or more folds. The exact number and orientations of 133 the folds is implementation and/or site-defined.
134 '11'	'trim': Trim the document(s) on one or more edges. The exact number of edges and the 135 amount to be trimmed is implementation and/or site-defined.
136 '12'	'bale': Bale the document(s). The type of baling is implementation and/or site-defined.
137 '13'	'booklet-maker': Deliver the document(s) to the signature booklet maker. This value is a 138 short cut for specifying a job that is to be folded, trimmed and then saddle-stitched.
139 '14'	'jog-offset': Shift each copy of an output document from the previous copy by a small 140 amount which is device dependent. This value has no effect on the “job-sheet”. This 141 value SHOULD NOT have an effect if each copy of the job consists of one sheet.
142 '15'-'19'	reserved for future generic finishing enum values.

143 The following values are more specific stapling, stitching and binding values; they indicate a corner or an  
 144 edge as if the document were a portrait document (see section 4.2.6.1):

- 145 ‘20’ ‘staple-top-left’: Bind the document(s) with one or more staples in the top left corner.
- 146 ‘21’ ‘staple-bottom-left’: Bind the document(s) with one or more staples in the bottom left  
 147 corner.
- 148 ‘22’ ‘staple-top-right’: Bind the document(s) with one or more staples in the top right corner.
- 149 ‘23’ ‘staple-bottom-right’: Bind the document(s) with one or more staples in the bottom right  
 150 corner.
- 151 ‘24’ ‘edge-stitch-left’: Bind the document(s) with one or more staples (wire stitches) along the  
 152 left edge. The exact number and placement of the staples is implementation and/or  
 153 site-defined.
- 154 ‘25’ ‘edge-stitch-top’: Bind the document(s) with one or more staples (wire stitches) along the  
 155 top edge. The exact number and placement of the staples is implementation and/or  
 156 site-defined.
- 157 ‘26’ ‘edge-stitch-right’: Bind the document(s) with one or more staples (wire stitches) along the  
 158 right edge. The exact number and placement of the staples is implementation and/or  
 159 site-defined.
- 160 ‘27’ ‘edge-stitch-bottom’: Bind the document(s) with one or more staples (wire stitches) along  
 161 the bottom edge. The exact number and placement of the staples is implementation  
 162 and/or site-defined.
- 163 ‘28’ ‘staple-dual-left’: Bind the document(s) with two staples (wire stitches) along the left edge  
 164 assuming a portrait document (see above).
- 165 ‘29’ ‘staple-dual-top’: Bind the document(s) with two staples (wire stitches) along the top edge  
 166 assuming a portrait document (see above).
- 167 ‘30’ ‘staple-dual-right’: Bind the document(s) with two staples (wire stitches) along the right  
 168 edge assuming a portrait document (see above).
- 169 ‘31’ ‘staple-dual-bottom’: Bind the document(s) with two staples (wire stitches) along the  
 170 bottom edge assuming a portrait document (see above).
- 171 ‘32’-‘49’ reserved for future specific stapling and stitching enum values.
- 172
- 173 ‘50’ ‘bind-left’: Bind the document(s) along the left edge; the type of the binding is site-defined.
- 174 ‘51’ ‘bind-top’: Bind the document(s) along the top edge; the type of the binding is site-defined.
- 175 ‘52’ ‘bind-right’: Bind the document(s) along the right edge; the type of the binding is site-  
 176 defined.
- 177 ‘53’ ‘bind-bottom’: Bind the document(s) along the bottom edge; the type of the binding is site-  
 178 defined.
- 179 ‘54’-MAX reserved for future specific binding enum values and other groups of enum values, such as  
 180 folding, trimming, and baling.

181 The ‘staple-xxx’ values are specified with respect to the document as if the document were a portrait  
 182 document. If the document is actually a landscape or a reverse-landscape document, the client supplies the  
 183 appropriate transformed value. For example, to position a staple in the upper left hand corner of a  
 184 landscape document when held for reading, the client supplies the ‘staple-bottom-left’ value (since  
 185 landscape is defined as a +90 degree rotation of the image with respect to the media from portrait, i.e., anti-  
 186 clockwise). On the other hand, to position a staple in the upper left hand corner of a reverse-landscape

187 document when held for reading, the client supplies the ‘staple-top-right’ value (since reverse-landscape is  
188 defined as a -90 degree rotation of the image with respect to the media from portrait, i.e., clockwise).

189 The angle (vertical, horizontal, angled) of each staple with respect to the document depends on the  
190 implementation which may in turn depend on the value of the attribute.

191 Note: The effect of this attribute on jobs with multiple documents is controlled by the “multiple-document-  
192 handling” job attribute (section 4.2.4) and the relationship of this attribute and the other attributes that  
193 control document processing is described in section 15.3.

194 If the client supplies a value of ‘none’ along with any other combination of values, it is the same as if only  
195 that other combination of values had been supplied (that is the ‘none’ value has no effect).

### 196 **3 Conformance Requirements**

197 The Printer and client conformance requirements for supporting this attribute are the same as for any Job  
198 Template attribute (see [RFC2911]).

### 199 **4 IANA Considerations**

200 These “finishings” type2 enum attribute values will be published by IANA according to the procedures in  
201 RFC 2911 [RFC2911] section 6.1 with the following URL:

202 <ftp://isi.edu/iana/assignments/ipp/attribute-values/finishings/fold-trim-bale.txt>

### 203 **5 Internationalization Considerations**

204 Normally, a client will provide localization of the enum values of this attribute to the language of the user.

### 205 **6 Security Considerations**

206 This extension poses no additional security threats or burdens than those in IPP/1.0 [RFC2566, RFC2565]  
207 and IPP/1.1 [RFC2911, RFC2910]. However, implementations MAY support different access control to  
208 various finishing features, depending on the identity of the job submitting user.

### 209 **7 References**

210 [ipp-iig]

211 Hastings, T., Manros, C., “Internet Printing Protocol/1.1: <draft-ietf-ipp-implementers-guide-v11-  
212 01.txt>, work in progress, May 30, 2000.

- 213 [RFC2565]  
214 Herriot, R., Butler, S., Moore, P., Tuner, R., “Internet Printing Protocol/1.0: Encoding and  
215 Transport”, RFC 2565, April 1999.
- 216 [RFC2566]  
217 R. deBry, T. Hastings, R. Herriot, S. Isaacson, P. Powell, “Internet Printing Protocol/1.0: Model and  
218 Semantics”, RFC 2566, April 1999.
- 219 [RFC2567]  
220 Wright, D., “Design Goals for an Internet Printing Protocol”, RFC 2567, April 1999.
- 221 [RFC2568]  
222 Zilles, S., “Rationale for the Structure and Model and Protocol for the Internet Printing Protocol”,  
223 RFC 2568, April 1999.
- 224 [RFC2569]  
225 Herriot, R., Hastings, T., Jacobs, N., Martin, J., “Mapping between LPD and IPP Protocols”, RFC  
226 2569, April 1999.
- 227 [RFC2639]  
228 Hastings, T., Manros, C., “Internet Printing Protocol/1.0: Implementer’s Guide”, RFC 2639, July  
229 1999.
- 230 [RFC2910]  
231 Herriot, R., Butler, S., Moore, P., Turner, R., and J. Wenn, “Internet Printing Protocol/1.1:  
232 Encoding and Transport”, RFC 2910, September 2000.
- 233 [RFC2911]  
234 Hastings, T., Herriot, R., deBry, R., Isaacson, S., and P. Powell, “Internet Printing Protocol/1.1:  
235 Model and Semantics”, RFC 2911, September 2000.

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255 IPP Web Page: <http://www.pwg.org/ipp/>  
 256 IPP Mailing List: [ipp@pwg.org](mailto:ipp@pwg.org)  
 257

258 To subscribe to the ipp mailing list, send the following email:

- 259 1) send it to [majordomo@pwg.org](mailto:majordomo@pwg.org)  
 260 2) leave the subject line blank  
 261 3) put the following two lines in the message body:  
 262 subscribe ipp  
 263 end

264 Implementers of this specification document are encouraged to join IPP Mailing List in order to participate  
 265 in any discussions of clarification issues and review of registration proposals for additional attributes and  
 266 values.

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Michael Wu - Heidelberg Digital	Peter Zehler - Xerox

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## 269 **9 Appendix A: Summary of other IPP documents**

270 The full set of IPP documents includes:

- 271 Design Goals for an Internet Printing Protocol [RFC2567]  
 272 Rationale for the Structure and Model and Protocol for the Internet Printing Protocol [RFC2568]  
 273 Internet Printing Protocol/1.1: Model and Semantics [RFC2911]  
 274 Internet Printing Protocol/1.1: Encoding and Transport [RFC2910]  
 275 Internet Printing Protocol/1.1: Implementer's Guide [IPP-IIG]  
 276 Mapping between LPD and IPP Protocols [RFC2569]  
 277

278 The “Design Goals for an Internet Printing Protocol” document takes a broad look at distributed printing  
279 functionality, and it enumerates real-life scenarios that help to clarify the features that need to be included  
280 in a printing protocol for the Internet. It identifies requirements for three types of users: end users,  
281 operators, and administrators. It calls out a subset of end user requirements that are satisfied in IPP/1.0. A  
282 few OPTIONAL operator operations have been added to IPP/1.1.

283 The “Rationale for the Structure and Model and Protocol for the Internet Printing Protocol” document  
284 describes IPP from a high level view, defines a roadmap for the various documents that form the suite of  
285 IPP specification documents, and gives background and rationale for the IETF working group’s major  
286 decisions.

287 The “Internet Printing Protocol/1.1: Encoding and Transport” document is a formal mapping of the abstract  
288 operations and attributes defined in the model document onto HTTP/1.1 [RFC2616]. It defines the  
289 encoding rules for a new Internet MIME media type called “application/ipp”. This document also defines  
290 the rules for transporting over HTTP a message body whose Content-Type is “application/ipp”. This  
291 document defines a new scheme named ‘ipp’ for identifying IPP printers and jobs.

292 The “Internet Printing Protocol/1.1: Implementer’s Guide” document gives insight and advice to  
293 implementers of IPP clients and IPP objects. It is intended to help them understand IPP/1.1 and some of  
294 the considerations that may assist them in the design of their client and/or IPP object implementations. For  
295 example, a typical order of processing requests is given, including error checking. Motivation for some of  
296 the specification decisions is also included.

297 The “Mapping between LPD and IPP Protocols” document gives some advice to implementers of gateways  
298 between IPP and LPD (Line Printer Daemon) implementations.

## 299 **10 Appendix B: Description of the IEEE Industry Standards and Technology (ISTO)**

300 The IEEE-ISTO is a not-for-profit corporation offering industry groups an innovative and flexible  
301 operational forum and support services. The IEEE-ISTO provides a forum not only to develop standards,  
302 but also to facilitate activities that support the implementation and acceptance of standards in the  
303 marketplace. The organization is affiliated with the IEEE (<http://www.ieee.org/>) and the IEEE Standards  
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305 For additional information regarding the IEEE-ISTO and its industry programs visit:

306 <http://www.ieee-isto.org>

## 307 **11 Appendix C: Description of the IEEE-ISTO PWG**

308 The Printer Working Group (or PWG) is a Program of the IEEE Industry Standards and Technology  
309 Organization (ISTO) with member organizations including printer manufacturers, print server developers,  
310 operating system providers, network operating systems providers, network connectivity vendors, and print  
311 management application developers. The group is chartered to make printers and the applications and

312 operating systems supporting them work together better. All references to the PWG in this document  
313 implicitly mean “The Printer Working Group, a Program of the IEEE ISTO.” In order to meet this  
314 objective, the PWG will document the results of their work as open standards that define print related  
315 protocols, interfaces, procedures and conventions. Printer manufacturers and vendors of printer related  
316 software will benefit from the interoperability provided by voluntary conformance to these standards.

317 In general, a PWG standard is a specification that is stable, well understood, and is technically competent,  
318 has multiple, independent and interoperable implementations with substantial operational experience, and  
319 enjoys significant public support.

320 For additional information regarding the Printer Working Group visit:

321 <http://www.pwg.org>

322