

1 PWG WORKING DRAFT ISSUES are highlighted like this.
2 <ipp-job-prog-attr-9905190416.doc>

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5 Proposed IPP/1.0 and IPP/1.1 Job Progress Attributes for IPP and Event 6 Report Content

7 Version 0.32

8 Abstract

9 This ~~white~~ paper ~~proposes~~ defines five new Job Description attributes to be registered for use with
10 IPP/1.0 [RFC2566] and IPP/1.1 [ipp-mod]. These attributes are drawn from the PWG Job Monitoring
11 MIB [jmp-mib]. They were originally contained in the long notification proposal [ipp-not-long], and
12 have been placed in this separate more manageable-sized specification. This paper also defines a new
13 "sheet-collate" Job Template attribute to control sheet collation. This paper also defines a new ~~These~~
14 ~~attributes are to be used with the~~ IPP notification event report format that includes these attributes and
15 some existing attributes. These new attributes may also be used by themselves as useful job progress
16 monitoring attributes. The ~~five~~ new attributes are:

- 17 "job-collation-type" (type2 enum)
- 18 "sheet-completed-copy-number" (integer(-2:MAX))
- 19 "sheet-completed-document-number" (integer(-2:MAX))
- 20 "impressions-interpreted" (integer(-2:MAX))
- 21 "impressions-completed-current-copy" (integer(-2:MAX))
- 22 "sheet-collate" (boolean) -- Job Template attribute

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39 **1 New Job Template attribute**

40 **1.1 "sheet-collate" (boolean)**

Job Attribute	Printer: Default Value	Printer: Supported Values Attribute
sheet-collate (boolean)	sheet-collate-default (boolean)	sheet-collate-supported (1setOf boolean)

49

50 This attribute specifies whether or not the media sheets of each copy of each printed document in a job
 51 are to be in sequence, when multiple copies of the document are specified by the 'copies' attribute. When
 52 "sheet-collate" is 'true', each copy of each document is printed with the print-stream sheets in sequence.
 53 When 'sheet-collate' is 'false', each print-stream sheet is printed a number of times equal to the value of
 54 the 'copies' attribute in succession. For example, suppose a document which produces two media sheets
 55 as output, and "copies" is equal to '6', in this case six copies of the first media sheet are printed followed
 56 by six copies of the second media sheet.

57 Whether the effect of sheet collation is achieved by placing copies of a document in multiple output bins
 58 or in the same output bin with implementation defined document separation is implementation
 59 dependent. Also whether it is achieved by making multiple passes over the job or by using an output
 60 sorter is implementation dependent.

61 Note: IPP/1.0 [RFC2566] and IPP/1.1 [ipp-mod] is silent on whether or not sheets within documents are
 62 collated. The "sheet-collate-supported" attribute permits a Printer object to indicate whether or not it
 63 collates sheets with each document and whether it allows the client to control sheet collation. An
 64 implementation is able to indicate that it supports uncollated sheets, collated sheets, or both, using 'false',
 65 'true', or both 'false' and 'true' values, respectively.

66

67 **2 New IPP Job Description attributes**

68 The following IPP Job Description attributes are proposed to be added to IPP through the type2
 69 registration procedures. They are useful for monitoring the progress of a job. They are also used at
 70 attributes in the notification content in a notification report [ipp-not].

71 **2.1 "job-collation-type" (type2 enum)**

72 **ISSUE - Or should the attribute syntax by 'type2 keyword' to go with "multiple-document-**
 73 **handling(type2 keyword)", instead of the Job MIB enum syntax?**

74 Job Collation includes sheet collation and document collation. Sheet collation is defined to be the
 75 ordering of sheets within a document copy. Document collation is defined to be ordering of document
 76 copies within a multi-document job. The value of the "job-collation-type" is affected by the value of the

77 "sheet-collate" Job Template attribute (see section 1.1), if supplied and supported. ~~There are three types~~
78 ~~of job collation:~~

79 The Standard enum values are:

80

81 '1' 'other': not one of the defined values

82

83 '2' 'unknown': the collation type is unknown

84 **ISSUE - Or should we use the out-of-band 'unknown' value instead of this Job Monitoring MIB**
85 **value?**

86

87 '3' 'uncollated-sSheets': No collation of the sheets within each document copy, i.e., each
88 sheet of a document that is to produce multiple copies is replicated before the next
89 sheet in the document is processed and stacked. If the device has an output bin
90 collator, the 'uncollated-sSheets(3)' value may actually produce collated sheets as
91 far as the user is concerned (in the output bins). However, when the job collation
92 is the 'uncollated-sSheets(3)' value, job progress is indistinguishable to a
93 monitoring application between a device that has an output bin collator and one
94 that does not.

95

96 '4' 'collated-dDocuments': Collation of the sheets within each document copy is performed
97 within the printing device by making multiple passes over either the source or an
98 intermediate representation of the document. In addition, when there are multiple
99 documents per job, the i'th copy of each document is stacked before the j'th copy
100 of each document, i.e., the documents are collated within each job copy. For
101 example, if a job is submitted with documents, A and B, the job is made available
102 to the end user as: A, B, A, B, The 'collated-dDocuments(4)' value
103 corresponds to the IPP [ipp-model] 'separate-documents-collated-copies' keyword
104 value of the "multiple-document-handling" attribute.

105

106 If the job's jobCopiesRequested or documentCopiesRequested "copies" attribute is
107 = '1' (or not supplied), then the "job-collation-type" attribute is defined to be '4'.

108

109 '5' 'uncollated-dDocuments': Collation of the sheets within each document copy is
110 performed within the printing device by making multiple passes over either the
111 source or an intermediate representation of the document. In addition, when there
112 are multiple documents per job, all copies of the first document in the job are
113 stacked before the any copied of the next document in the job, i.e., the documents
114 are uncollated within the job. For example, if a job is submitted with documents,
115 A and B, the job is mad available to the end user as: A, A, ..., B, B, The
116 'uncollated-dDocuments(5)' value corresponds to the IPP [ipp-model] 'separate-
117 documents-uncollated-copies' keyword value of the "multiple-document-
118 handling" attribute.

119 **2.2.2 "sheet-completed-copy-number" (integer(-2:MAX))**

120 The number of the copy being stacked for the current document. This number starts at 0, is set to 1
121 when the first sheet of the first copy for each document is being stacked and is equal to n where n is the
122 nth sheet stacked in the current document copy. See section **Error! Reference source not found.**

123 **ISSUE 1: Should we change the lower limit to 0 and use the IPP out-of-bound values: 'unknown' for -2?**
124 **Same issue as [ipp-mib] for the mapping of IPP attributes to the Printer MIB integer objects.**

125 **2.3 "sheet-completed-document-number" (integer(-2:MAX))**

126 The ordinal number of the document in the job that is currently being stacked. This number starts at 0,
127 increments to 1 when the first sheet of the first document in the job is being stacked, and is equal to n
128 where n is the nth document in the job, starting with 1.

129 Implementations that only support one document jobs SHOULD NOT implement this attribute.

130 **ISSUE 1: Should we change the lower limit to 0 and use the IPP out-of-bound values: 'unknown'**
131 **instead of '-2'?**

132 **2.4 "impressions-interpreted" (integer(-2:MAX))**

133 The number of impressions interpreted for the job so far.

134 **ISSUE 1: Should we change the lower limit to 0 and use the IPP out-of-bound values: 'unknown'**
135 **instead of '-2'?**

136 **2.5 "impressions-completed-current-copy" (integer(-2:MAX))**

137 The number of impressions completed by the device for the current copy of the current document so far.
138 For printing, the impressions completed includes interpreting, marking, and stacking the output. For
139 other types of job services, the number of impressions completed includes the number of impressions
140 processed.

141 This value SHALL be reset to 0 for each document in the job and for each document copy.

142 **ISSUE 1: Should we change the lower limit to 0 and use the IPP out-of-bound values: 'unknown'**
143 **instead of '-2'?**

144 **3 Job Progress Events Report Format**

145 This section lists the parameters and attributes that are included in the Basic Job event report content.
146 Additional job events can be registered which use the Basic Job Event report content.

147 If the 'job-progress-events' event is supported, the implementation MUST support the following
148 REQUIRED job object attributes, MUST support the following CONDITIONAL job object attributes, if
149 the condition is true, and MAY support the following OPTIONAL job object attributes. Any of the
150 following Job Description attributes that are supported MUST be included in an event report. All job
151 event reports MUST use the Get-Job-Attributes response syntax. The Job Progress Event Report MUST
152 include the following response parameters and job object attributes. The Job Attributes MAY be in any
153 order:

IPP/1.0 and IPP/1.1 Proposed Job Progress Attributes and Event Report Content

154	+-----+-----+-----+
155	Job object parameter/attribute REQUIRED reference
156	IN REPORT?
157	+-----+-----+-----+
158	version-number REQUIRED [ipp-mod] 3.1.1
159	+-----+-----+-----+
160	status-code (with the value: REQUIRED [ipp-mod] 3.1.1
161	job-progress-event(602))
162	+-----+-----+-----+
163	request-id (with a 0 value) REQUIRED [ipp-mod] 3.1.1
164	+-----+-----+-----+
165	job-printer-uri (uri) REQUIRED [ipp-mod] 4.3.3
166	+-----+-----+-----+
167	job-id (integer(1:MAX)) REQUIRED [ipp-mod] 4.3.2
168	+-----+-----+-----+
169	job-trigger-events REQUIRED section Error!
170	Reference source not found.
171	(1setOf type2 keyword)
172	+-----+-----+-----+
173	job-trigger-time (integer(1:MAX)) REQUIRED section Error!
174	Reference source not found.
175	+-----+-----+-----+
176	job-collation-type (type2 enum) REQUIRED section 2.1
177	+-----+-----+-----+
178	sheet-completed-copy-number REQUIRED section 2.2
179	(integer(-2:MAX))
180	+-----+-----+-----+
181	sheet-completed-document-number REQUIRED section 2.3
182	(integer(-2:MAX))
183	+-----+-----+-----+
184	impressions-interpreted REQUIRED section 2.4
185	(integer(-2:MAX))
186	+-----+-----+-----+
187	impressions-completed-current-copy REQUIRED section 2.5
188	(integer(-2:MAX))
189	+-----+-----+-----+
190	subscription-id* CONDITIONAL [ipp-sub] 4.2
191	(integer(1:MAX))
192	+-----+-----+-----+
193	

Figure 1 - Job Progress Event Report Content

* If Job Independent Subscriptions [ipp-sub] is implemented and the event report is caused by an independent subscription request, the "subscription-id" MUST be supplied in the event report content. If the values of any of the attributes sent in an event report content are not known, the value sent in the report content is the out-of-band 'unknown' value, rather than omitting the attribute. See [ipp-mod] section 4.1.

4 Job Description Attributes for Monitoring Job Progress

The following is Appendix type of material.

203 There are a number of ~~objects and~~ Job Description attributes for monitoring the progress of a job. These
204 objects and attributes count the number of K octets, impressions, sheets, and pages requested or
205 completed. For impressions and sheets, "completed" ~~SHALL~~ means stacked, unless the implementation
206 is unable to detect when each sheet is stacked, in which case stacked is approximated when processing
207 of each sheet completes. There are objects and attributes for the overall job and for the current copy of
208 the document currently being stacked. For the latter, the rate at which the various objects and attributes
209 count depends on the sheet and document collation of the job.

210 Consider the following four ~~variables~~ Job Description attributes that are used to monitor the progress of
211 a job's impressions:

- 212 1. ~~job-I~~ job-I ~~impressions-C~~ impressions-C ~~completed~~ - counts the total number of impressions stacked for the
213 job
- 214 2. "impressions-C ~~completed-C~~ current-C ~~copy~~" - counts the number of impressions stacked for
215 the current document copy
- 216 3. "sheet-C ~~completed-C~~ copy-N ~~number~~" - identifies the number of the copy for the current
217 document being stacked where the first copy is 1.
- 218 4. "sheet-C ~~completed-D~~ document-N ~~number~~" - identifies the current document within the job
219 that is being stacked where the first document in a job is 1. NOTE: this attribute SHOULD
220 NOT be implemented for implementations that only support one document per job.

221 For each of the three types of job collation, a job with three copies of two documents (1, 2), where each
222 document consists of 3 impressions, the four variables have the following values as each sheet is stacked
223 for one-sided printing:

224 **"job-collation-type" = ?uncollated-sheets(3)?**

225

"job-impressions-completed"	"impressions-completed-current-copy"	"sheet-completed-copy-number"	"sheet-completed-document-number"
0	0	0	0
1	1	1	1
2	1	2	1
3	1	3	1
4	2	1	1
5	2	2	1
6	2	3	1
7	3	1	1
8	3	2	1
9	3	3	1
10	1	1	2
11	1	2	2
12	1	3	2
13	2	1	2
14	2	2	2
15	2	3	2
16	3	1	2
17	3	2	2
18	3	3	2

226

227 "job-collation-type" = ?collated-documents(4)?

228

"job-impressions-completed"	"impressions-completed-current-copy"	"sheet-completed-copy-number"	"sheet-completed-document-number"
0	0	0	0
1	1	1	1
2	2	1	1
3	3	1	1
4	1	1	2
5	2	1	2
6	3	1	2
7	1	2	1
8	2	2	1
9	3	2	1
10	1	2	2
11	2	2	2
12	3	2	2
13	1	3	1
14	2	3	1
15	3	3	1
16	1	3	2
17	2	3	2
18	3	3	2

229

230 "job-collation-type" = ?uncollated-documents(5)?

231

"job-impressions-completed"	"impressions-completed-current-copy"	"sheet-completed-copy-number"	"sheet-completed-document-number"
0	0	0	0
1	1	1	1
2	2	1	1
3	3	1	1
4	1	2	1
5	2	2	1
6	3	2	1
7	1	3	1
8	2	3	1
9	3	3	1
10	1	1	2
11	2	1	2
12	3	1	2
13	1	2	2
14	2	2	2
15	3	2	2
16	1	3	2
17	2	3	2
18	3	3	2

232

233 **5 Change History**

234 **5.1 Changes made to the April 16, 1999 version to make the May 19, 1999 version**

235 The following changes were made to the April 16, 1999 version to make the May 19, 1999 version:

- 236 1. Added the "sheet-collate" Job Template attribute.
- 237 2. Added the 'job-progress-event' report content type.

238 **6 References**

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