

1 Collected mail on Move-Job Requirements

2
3 File: move-job-requirements.doc

4 Date: March 24, 2000

5
6 -----Original Message-----

7 From: Hastings, Tom N [<mailto:hastings@cpl0.es.xerox.com>]

8 Sent: Tuesday, March 21, 2000 18:02

9 To: ipp

10 Subject: IPP> FW: Thoughts on the new Move-Job operation

11
12
13 Michael, Ira, Bob, and I have been exchanging email on the Move-Job
14 operation as a result of last week's IPP telecon. We have a few issues
15 left. But here is where we are for tomorrow's IPP telecon, 3/22.

16
17 The issues are listed.

18
19 Tom

20
21 -----Original Message-----

22 From: Hastings, Tom N

23 Sent: Friday, March 17, 2000 11:51

24 To: Sweet, Michael

25 Cc: 'Hastings, Tom'; Herriot, Bob; Zehler, Peter; Shepherd, Michael;

26 'McDonald, Ira at Sharp'; Manros, Carl-Uno B

27 Subject: Thoughts on the new Move-Job operation

28
29
30 Michael,

31
32 I'd like to add a few more semantics to the IPP Move-Job operation from you
33 starting point in your email below and wanted to get your reaction. If we
34 all agree, I'll crank out a complete proposal this Monday for this
35 Wednesday's telecon:

36
37 (As a comment, lets also agree that we can also have a fancy Resubmit-Job
38 operation sometime in the future, which causes a Printer to act like a
39 client and submit the job to any other Printer. So anyone who wants that
40 fancy stuff will NOT try to get it into our simple Move-Job operation, ok?
41 Then we can keep Move-Job simple.)

42
43
44 1. We need to agree for which job states the Move-Job MUST be accepted,
45 which ones it MAY be accepted and which states it MUST be rejected. I
46 propose:

47
48 'pending-held', 'pending' - MUST be accepted

49 'processing', 'completed', 'aborted', 'canceled' - MUST be rejected.

50
51 ISSUE 01: There is some debate as to whether to ALLOW the Move-Job
52 operation to be supported when the job is in the 'processing' state. If it
53 is allowed, it would be a MAY, not a MUST, because some systems will have
54 problems with accounting if the same job-id is reused for the job again if
55 some resources had been consumed.

58 2. In case the Printer defaults are different for the new Printer, we need
59 to specify that the new Printer's defaults will be used when the job is
60 processed, even if they differ from the defaults of the old Printer.

61
62
63 3. If the new Printer would reject the job, then the move returns an error
64 and the job remains unchanged on the old Printer.

65
66
67 4. Make the Move-Job operation request be as much like a Create-Job request
68 as possible, with the exception that the client MUST supply the "job-id"&old
69 "printer-uri" (or old "job-uri") and the new "printer-uri".

70
71
72 5. Which brings up the question of "ipp-attribute-fidelity". If an operator
73 moves the job, it would be good if the original fidelity were preserved. In
74 other words, if the user has submitted with fidelity 'true', the operator
75 should perform the move with 'true'. If the user has submitted the job with
76 fidelity 'false', then the operator should do the same. If the
77 "ipp-attribute-fidelity" is omitted in the Move-Job request, the Job's
78 original "ipp-attribute-fidelity" supplied in the Job Creation operation is
79 used. The Move-Job operation does not update the Job's
80 "ipp-attribute-fidelity" (in case another Move-Job operation is done, so
81 that the user's original intent is preserved).

82
83 **ISSUE 02: Ok to REQUIRE that the "ipp-attribute-fidelity" operation**
84 **attribute be copied to the Job object, if the Move-Job operation is**
85 **supported?**

86
87
88 6. Finally, do we want to make Move-Job be like the Job Creation operations
89 and specify that the Move-Job response MUST be the same as the Print-Job
90 response:

- 91
92 - MUST include the "job-uri", "job-id", "job-state" and "job-state-reasons"
93 - If supported, MUST include the "job-state-message" and
94 "number-of-intervening-jobs"

95
96 I suggest for consistency, that we make the Move-Job response be identical
97 to the Print-Job response. Ok?

98
99
100 7. Clarify that the implementation MAY change the "job-id" and/or the
101 "job-uri" and REQUIRE the "job-id" and "job-uri" to be returned in the
102 response, in case the implementation changes it. Always returning the
103 "job-id" makes it more like the Job Creation operations.

104
105
106 8. Add to the Notification Specification: Any Per-Job Subscriptions move
107 with the job. If the implementation does change the "job-id", then the
108 Subscription object is changed automatically.

109
110 **ISSUE 03: Ok that Per-Job Subscriptions are automatically updated to be for**
111 **the new job (whether the job-id changes or not)?**

112
113
114 9. Probably need to add a new Job event to the Notification Specification:

115 'job-moved' which has both the old and new job-ids in the notification
116 content, in case they are different.

117
118 ISSUE 04: Should there be a new 'job-moved' event or is moving a job, just
119 another operation that generates the 'job-created' (along with Print-Job,
120 Print-URI, and Create-Job)?

121
122
123 10. ISSUE 05: For all of us to consider:

124
125 Should we add this operation to the Set Job and Printer Spec (because it is
126 similar to scope and usage to the Set-Job-Attributes and
127 Set-Printer-Attribute spec), add it to the Administrative Set2 spec, or keep
128 it as a separate spec?

129
130 ftp://ftp.pwg.org/pub/pwg/ipp/new_OPS/ipp-job-printer-set-ops-000308.pdf

131
132
133 Thanks,
134 Tom

135
136

137 -----Original Message-----
138 From: Michael Sweet [<mailto:mike@easysw.com>]
139 Sent: Friday, March 17, 2000 11:00 AM
140 To: Manros, Carl-Uno B
141 Subject: Re: Your Set-Printer-Attributes operation
142
143
144 ...
145
146 Quick outline of the new operation:
147
148 CUPS-Move-Job Request
149
150 attributes-charset
151 attributes-natural-language
152 job-uri *or* printer-uri + job-id
153 requesting-user-name (optional, "SHOULD")
154 job-printer-uri
155
156 CUPS-Move-Job Response
157
158 attributes-charset
159 attributes-natural-language
160
161 Possible errors: successful-ok, client-error-not-found,
162 client-error-not-possible,
163 client-error-forbidden
164
165 Of course, there are things such as unsupported attributes or
166 document formats we need to deal with for the general IPP
167 implementation (not generally an issue for CUPS), but that's
168 what we're planning on implementing for CUPS...
169

170 -----Original Message-----
171 From: henrik.holst@i-data.com [<mailto:henrik.holst@i-data.com>]
172 Sent: Wednesday, March 22, 2000 00:47
173 To: ipp@pwg.org
174 Subject: Re: IPP> FW: Thoughts on the new Move-Job operation
175
176
177 ISSUE 1
178 I agree that this operation is not mandatory, so I think it's a MAY.
179
180 ISSUE 2
181 Yes
182
183 ISSUE 3
184 Yes
185
186 ISSUE 4
187 I think there should be a new notification event, for moving a job. Just
188 imagine if you submit a job on one printer, wouldn't you like to know if the
189 administrator has moved your job to another printer.
190
191 ISSUE 5
192 I think it should be in the 'Set Job and Printer' spec. I don't like to split
193 it up to more documents. It's confusing for the implementers when we add more
194 and more documents.
195
196
197 Henrik
198
199
200
201

202 -----Original Message-----
203 From: McDonald, Ira [<mailto:imcdonald@sharplabs.com>]
204 Sent: Friday, March 24, 2000 10:01
205 To: 'Michael Sweet'; Hastings, Tom N
206 Cc: ipp
207 Subject: RE: IPP> FW: Thoughts on the new Move-Job operation
208
209 Hi Michael and Tom,
210
211 My comments are below, preceded by 'ira>'.
212
213 ...
214
215 Cheers,
216 - Ira McDonald, consulting architect at Sharp Labs America
217 High North Inc
218
219 -----Original Message-----
220 From: Michael Sweet [<mailto:mike@easysw.com>]
221 Sent: Wednesday, March 22, 2000 5:55 AM
222 To: Hastings, Tom N
223 Cc: ipp
224 Subject: Re: IPP> FW: Thoughts on the new Move-Job operation
225
226
227 "Hastings, Tom N" wrote:
228 >
229 > Michael, Ira, Bob, and I have been exchanging email on the Move-Job
230 > operation as a result of last week's IPP telecon. We have a few
231 > issues left. But here is where we are for tomorrow's IPP telecon,
232 > 3/22.
233
234 As usual, I won't be able to "attend" the telecon... :(
235
236 My comments are below...
237
238 > ...
239 > ISSUE 01: There is some debate as to whether to ALLOW the Move-Job
240 > operation to be supported when the job is in the 'processing' state.
241 > If it is allowed, it would be a MAY, not a MUST, because some
242 > systems will have problems with accounting if the same job-id is
243 > reused for the job again if some resources had been consumed.
244
245 See my other comments on this; to summarize, I think we'll need to
246 allow the "move-job" operation to create a new job-id and job-uri
247 as needed by the implementation. The new job-id should not be
248 REQUIRED, since this will open up another can of worms with
249 accounting and job persistence - e.g. doubling the server's disk/
250 memory requirements if document files are persistent until purged.
251 (something that CUPS 1.1 supports)
252
253 ira> I agree with the caveat that the reused job-id MUST represent
254 ira> a job which NEVER entered the 'processing' state on the original
255 ira> Printer - otherwise it becomes an avenue for an accounting
256 ira> exploit that runs a job twice and gets charged once.
257
258 > ...

259 > 2. In case the Printer defaults are different for the new Printer,
260 > we need to specify that the new Printer's defaults will be used when
261 > the job is processed, even if they differ from the defaults of the
262 > old Printer.
263
264 This makes sense, since in the absense of job template attributes the
265 printer defaults (which the client may be oblivious to) are used
266 anyways by Create-Job, Send-Job, and Send-URI.
267
268 ira> I agree.
269
270 > ...
271 > "printer-uri" (or old "job-uri") and the new "printer-uri".
272
273 Which should be called "job-printer-uri" to avoid ambiguity with
274 the printer-uri used to identify the job.
275
276 ira> Not sure which Printer URI is being renamed above. I'd
277 ira> suggest that an operation attribute in 'Move-Job' be called
278 ira> 'target-printer-uri' or 'new-printer-uri' for clarity.
279
280 > ...
281 > ISSUE 02: Ok to REQUIRE that the "ipp-attribute-fidelity" operation
282 > attribute be copied to the Job object, if the Move-Job operation is
283 > supported?
284
285 Yes. Similarly, if the new printer object does not support the
286 attributes provided, and ipp-attribute-fidelity is true, then
287 a client-error-conflicting-attributes error needs to be returned
288 and the job is not moved.
289
290 ira> I agree.
291
292 > 6. Finally, do we want to make Move-Job be like the Job Creation
293 > operations and specify that the Move-Job response MUST be the same
294 > as the Print-Job response:
295
296 Yes.
297
298 ira> I agree.
299
300 > ...
301 > ISSUE 03: Ok that Per-Job Subscriptions are automatically updated to
302 > be for the new job (whether the job-id changes or not)?
303
304 This is a sticky problem; if the job-id (and job-uri) changes, then
305 the recipient of the notifications may not know what the notification
306 is for (e.g. I am subscribed to job 5, I move the job, now I am
307 subscribed to job 6???)
308
309 Obviously we'll need a "move-job" event subscription, and that
310 event needs to provide the new job-id, job-printer-uri, and
311 job-uri attributes for the job (whether the job-id has changed or
312 not)
313
314 ira> This is covered by the notification content including the
315 ira> 'subscriber-user-data' opaque element (intended for client

316 ira> use to specify a useful correlation handle). In the Job
317 ira> Monitoring MIB we have the (normally client constructed)
318 ira> 'jmJobSubmissionID' for reliable correlation. In IPP
319 ira> notifications we also have 'job-name' (client supplied)
320 ira> in the standard bindings, which could be used for client
321 ira> correlation of the 'old' and 'new' jobs and their events.
322
323 > ISSUE 04: Should there be a new 'job-moved' event or is moving a
324 > job, just another operation that generates the 'job-created' (along
325 > with Print-Job, Print-URI, and Create-Job)?
326
327 I think we need it. If we end up requiring a new job-id (something
328 I'd rather not do), then we also need to add a new job-state value
329 for "job-moved", since "completed", "cancelled", and "aborted" do
330 not make sense.
331
332 ira> I agree that we need 'job-moved' as an event AND also in
333 ira> 'job-state-reasons'. We MUST NOT add a new 'job-state'.
334 ira> This would break all existing IPP and Job Monitoring MIB
335 ira> implementations. The Xerox MFP I worked with in the past
336 ira> on this feature transitioned the 'old' job to 'job-state'
337 ira> of 'cancelled' and 'job-state-reasons' of 'job-moved'.
338
339 > 10. ISSUE 05: For all of us to consider:
340 >
341 > Should we add this operation to the Set Job and Printer Spec
342 > (because it is similar to scope and usage to the Set-Job-Attributes
343 > and Set-Printer-Attribute spec), add it to the Administrative Set2
344 > spec, or keep it as a separate spec?
345
346 It might make sense to include it there. However, I think we've
347 identified enough issues that move-job may be large enough to make
348 it a separate spec all by itself.
349
350 ira> I think we should add 'Move-Job' to the existing IPP Admin
351 ira> Operations spec (aka 'set2' which was a terrible name...).
352 ira> It does NOT belong in the IPP Set Operations spec.
353

354 -----Original Message-----
355 From: Michael Sweet [<mailto:mike@easysw.com>]
356 Sent: Friday, March 24, 2000 10:40
357 To: McDonald, Ira
358 Cc: Hastings, Tom N; ipp
359 Subject: Re: IPP> FW: Thoughts on the new Move-Job operation
360
361
362 "McDonald, Ira" wrote:
363 > ...
364 > ira> I agree with the caveat that the reused job-id MUST represent
365 > ira> a job which NEVER entered the 'processing' state on the
366 > ira> original Printer - otherwise it becomes an avenue for an
367 > ira> accounting exploit that runs a job twice and gets charged once.
368
369 True with some implementations (I don't this CUPS would fall for
370 this, since each page is logged individually as soon as it goes to
371 the printer)
372
373 > ...
374 > Which should be called "job-printer-uri" to avoid ambiguity with
375 > the printer-uri used to identify the job.
376 >
377 > ira> Not sure which Printer URI is being renamed above. I'd
378 > ira> suggest that an operation attribute in 'Move-Job' be called
379 > ira> 'target-printer-uri' or 'new-printer-uri' for clarity.
380
381 Right. My issue is just that the "printer-uri + job-id" method of
382 referencing a job means that the *new* target printer object needs
383 to be specified with a differently named attribute. Since
384 "job-printer-uri" is already spec'd as a job template attribute, we
385 can reuse it with Move-Job...
386
387 > ...
388 > I think we need it. If we end up requiring a new job-id (something
389 > I'd rather not do), then we also need to add a new job-state value
390 > for "job-moved", since "completed", "cancelled", and "aborted" do
391 > not make sense.
392 >
393 > ira> I agree that we need 'job-moved' as an event AND also in
394 > ira> 'job-state-reasons'. We MUST NOT add a new 'job-state'.
395 > ira> This would break all existing IPP and Job Monitoring MIB
396 > ira> implementations. The Xerox MFP I worked with in the past
397 > ira> on this feature transitioned the 'old' job to 'job-state'
398 > ira> of 'cancelled' and 'job-state-reasons' of 'job-moved'.
399
400 OK, sounds good. Just as long as the state can be uniquely
401 identified...
402
403 --
404
405 Michael Sweet, Easy Software Products mike@easysw.com
406 Printing Software for UNIX <http://www.easysw.com>
407
408