

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](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 think 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