

1 **Questions and answers about proposed new operations**

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3 Date: 7/6/1998

4 File: ms-new-operations-questions.doc

5 I welcome the proposal for new operations. These look very reasonable and useful. ISO DPA
6 has had them as well. Implementations of ISO DPA have had experience with their
7 implementations that can be brought to bear (and to simplify IPP).

8 However, in order to gain full interoperability between various implementations there are a
9 number of questions that need to be answered and the agreements added to the specification of
10 these operations. I have indicated the questions and suggested answers with highlighting like
11 **this**. See if you think if answering such questions is a good way to nail down the details, rather
12 than review the details of a (longer) specification.

13 Occasionally, I have an issue with what is being proposed. That is indicated as ISSUE, instead
14 of QUESTION.

15

16 **New IPP 1.0 Operations**

17 Microsoft has added several new operations to its implementation of IPP 1.0. They are currently
18 added in the private extension space but we believe that they are generally useful and so propose
19 that some (if not all) of them are moved into the main operation set.

20 [model] refers to the current IPP model and semantics document.

21 ***Operation attributes and responses***

22 **Job Operations**

23 The operation attributes and responses for the job operations are the same as the standard
24 Cancel-Job operation (see [model] 3.3.3).

25 **QUESTION 1: Shouldn't we use the hyphenation conventions for these operations?**

26 **SUGGESTED ANSWER: Yes, so Hold-Job, Pause-Printer, Release-Job, Resume-Printer,**
27 **Purge-Printer, Reprint-Job.**

28 **QUESTION 2: Which operations are Job operations:**

29 **SUGGESTED ANSWER: Hold-Job, Release-Job, Reprint-Job**

30 **Printer Operations**

31 **QUESTION 3: Which operations are Printer operations:**

32 **SUGGESTED ANSWER: Pause-Printer, Resume-Printer, Purge-Printer**

33 The operation attributes for the printer operations are as follows:-

34 Target:

35 Printer-URI – see 3.1.3 of [model]

36 Natural Language and Charset:

37 See 3.1.4.1 of [model]

38 Requesting User Name:

39 Should be supplied – see [model] 8.3

40 Response:

41 Status code and message as described in [model]3.1.5

42 **HoldJob**

43 Requests that a job be held in the queue – that means it is not eligible for scheduling. If the job is
44 not waiting to be printed than this operation has no effect (but completes successfully).

45 **QUESTION 4:** What state does the job go into after the operation?

46 **SUGGESTED ANSWER:** I suggest that the job go into the 'pending-held' job state.

47 **QUESTION 5:** What job-state-reason is set, if the job-state-reasons attribute is supported?

48 **SUGGESTED ANSWER:** Add two new job state reason keywords: 'job-held-by-user', and 'job-
49 held-by-operation' (analogous to Cancel-Job).

50 Also use the current 'processing-to-stop-point', as in the Cancel-Job, if the operation is accepted,
51 but the job is not able to be put into the 'pending-held' state immediately.

52 **ISSUE 1:** I suggest that the request be rejected if the implementation cannot or does not put the
53 job into the 'pending-held' state, rather than just accepting the operation.

54 **SUGGESTED FIX:** For authorized users, I suggest that an IPP object:

55 For a job in the 'pending' or 'pending-held' state, MUST accept the request and move the job into
56 the 'pending-held' state.

57 For a job in the 'pending' or 'pending-stopped' states, an implementation MAY either (1) accept
58 the operation and move the job to the 'pending-held' state if the implementation can process other
59 jobs on that Printer and later support the Release-Job operation for this job or (2) reject the
60 operation with the 'client-error-not-possible', depending on implementation.

61 **NOTE:** The former is ISO DPA Pause-Job semantics, but is hard to implement we have
62 found. Stopping a job in the middle and then resuming it later is difficult.

63 For a job in the 'completed', 'aborted', or 'canceled' states, MUST reject the operation with the
64 'client-error-not-possible' status code.

65 *Current Code:* 0X4000

66 *Access Rights:* The requesting user must either be the submitter of the job or an administrator of
67 the printer

68 **QUESTION 6:** What error codes if the access rights aren't satisfied?

69 SUGGESTED ANSWER: Return: client-error-forbidden, client-error-not-authenticated, and
70 client-error-not-authorized.

71 **ReleaseJob**

72 Requests that a previously held job be made eligible for scheduling once more.

73 QUESTION 7: What job states MUST the job be in in order to accept this operation?

74 SUGGESTED ANSWER: The IPP object MUST reject this operation, unless the identified job
75 is in the 'pending-held' state and, if implemented, the 'held-by-user' or 'held-by-operation' value is
76 present in the job's "job-state-reasons" attribute, if the user is the submitter of the job or an
77 administrator, respectively. If the job is not in the 'pending-held' state, the IPP object MUST
78 reject the request and return the 'client-error-not-possible' status code.

79 QUESTION 8: What happens to the job's job state?

80 SUGGESTED ANSWER: If there are no other reasons to hold the job, such as the "job-hold-
81 until" specifies a period of time in the future, the IPP object MUST move the job from the
82 'pending-held' state to the 'pending' state, whereupon it MAY move immediately to the
83 'processing' state, if there are no other jobs pending with a higher priority.

84 *Current Code:* 0X4002

85 *Access Rights:* The requesting user must either be the submitter of the job or an administrator of
86 the printer

87 QUESTION 9: What error codes if the access rights aren't satisfied?

88 SUGGESTED ANSWER: Return: client-error-forbidden, client-error-not-authenticated, and
89 client-error-not-authorized.

90 **PausePrinter**

91 Requests that the printer stops scheduling new jobs. Any job that is currently being printed is
92 completed. The printer will still accept new jobs.

93 QUESTION 10: What state does the Printer go into?

94 SUGGESTED ANSWER: The Printer goes into the 'stopped' state

95 QUESTION 11: What printer-state-reason is set, if the printer-state-reasons attribute is
96 supported?

97 SUGGESTED ANSWER: The 'paused' value is added to the Printer object's "printer-state-
98 reasons" attribute.

99 ISSUE 2: Why does the current job continue printing? This doesn't sound like pushing the
100 pause button on the device. The name suggests that the IPP Printer should go into the 'stopped'
101 state and, if implemented, the 'paused' value added to the Printer object's "printer-state-reasons"
102 attribute. Also the current job go into the 'processing-stopped' state and, if implemented, the
103 'printer-stopped' value added to the job object's "job-state-reasons" attribute. The user can go
104 look at the Printer's "printer-state-reasons" attribute to see why the printer is stopped.

105 SUGGESTED FIX: Either require the above, or rename this operation to something like Stop-
106 Scheduling-Jobs, so that we can also have a Pause-Printer operation that does the above.

107 QUESTION 13: What states must the Printer be in/not it in order to accept/reject the Pause-
108 Printer?

109 SUGGESTED ANSWER: The Printer object MUST accept this operation if the Printer is in the
110 'idle' or 'processing' state. The Printer object MUST reject the operation if the Printer has
111 previously accepted a Pause-Printer operation without an intervening Resume-Printer, i.e., if the
112 'paused' value, if supported, is present in the Printer's "printer-state-reasons" attribute.

113 *Current Code:* 0X4001

114 *Access Rights:* The requesting user must be an administrator of the printer

115 **ResumePrinter**

116 Un-pauses a printer (see PausePrinter).

117 QUESTION 14: What states must the Printer be in/not it in order to accept/reject the Resume-
118 Printer operation?

119 SUGGESTED ANSWER: The Printer object MUST accept this operation if the Printer has
120 previously accepted a Pause-Printer operation without an intervening Resume-Printer, i.e., if the
121 'paused' value, if supported, is present in the Printer's "printer-state-reasons" attribute. Otherwise,
122 the Printer object MUST reject the operation and return the 'client-error-not-possible' status code.

123 *Current Code:* 0X4003

124 *Access Rights:* The requesting user must be an administrator of the printer

125 **PurgePrinter**

126 Removes all jobs queued for a printer. Any job that is currently printing is also cancelled.

127 *Current Code:* 0X4004

128 *Access Rights:* The requesting user must be an administrator of the printer

129 **ReprintJob**

130 Requests that a print job that is retained in the queue be (re)printed. In this case the job is sent to
131 the printer from the beginning.

132 QUESTION 15: Is this operation also used to move a job to another printer (after printing)?

133 SUGGESTED ANSWER: No. ISO DPA has a very complicated operation called ResubmitJob,
134 which works before or after the job has been printed and allows the printer to be specified as a
135 different one.

136 QUESTION 16: What states must the Job be in/not it in order to accept/reject the Reprint
137 operation?

138 SUGGESTED ANSWER: The IPP object MUST accept this operation if the Job is in the
139 'completed', 'aborted', or 'canceled' job states. If the job is in another other state ('pending-held',

140 'pending', 'processing', or 'processing-stopped'), the IPP object MUST reject the operation and
141 return the 'client-error-not-possible' status code.

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143 *Current Code:* 0X4005

144 *Access Rights:* The requesting user must either be the submitter of the job or an administrator of
145 the printer

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