

1 Subj: IPP attributes and syntaxes  
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5

6 Each attribute shall be in one of the following data syntaxes:  
7

8 string - arbitrary ASCII strings, no control characters, except  
9 <SPACE>.  
10 string pair - strings separated by ":"  
11 name - arbitrary ASCII strings, no control characters, and no  
12 <SPACE> characters.  
13 type 1 enum - standard names, must revise the standard to add  
14 a new name. No private names are allowed.  
15 type 2 enum - standard names, but an implementor can add new  
16 by proposing them to the PWG for registration  
17 (or an IANA-appointed registry advisor after the PWG  
18 is no longer certified) anytime. IANA keeps the  
19 registry.  
20 Implementors can add private (un-registered)  
21 with a suitable distinguishing prefix, such as -xxx-  
22 where xxx is the company name registered with IANA.  
23 type 3 enum - standard names, but an implementor can add new  
24 names by submitting a registration request directly to  
25 IANA, no PWG or IANA-appointed registry advisor review  
26 is required.  
27 Implementors can add private (un-registered) names  
28 with a suitable distinguishing prefix, such as -xxx-  
29 where xxx is the company name registered with IANA.  
30 type 3 pair - two type 3 enum names separated by ":".  
31 cardinal - 0 .. n represented as ASCII digits  
32 ordinal - 1 .. n represented as ASCII digits  
33 ordinal pair - two ordinals separated by ":"  
34 boolean - tokens: yes, y, true, or t and no, n, false, or f.  
35 date/time - date/time in ??? format  
36 url - Universal Resource Locator  
37 octet string - arbitrary binary octets  
38 string units - ordinal followed by type 2 enum units  
39

40 Here is the updated list of attributes from my notes with data syntaxes:  
41

Attribute name	syntax	s/m
Job Attributes		
Job Informational Attributes (set by client)		
job-originator (an authenticated value)	string	s
job-name	string	s
<del>job-originating-host</del>		
Job Informational Attributes (set by Printer)		
job-identifier	name	s
job-identifier-on-output-device (used by operator)	name	s
Printer Selection Attributes (set by client)		
printer-name-requested	name	s
<del>output device requested</del>		
Job Status Attributes (set by Printer)		
current-job-state	type 1 enum	s
printer-assigned [ let's keep it simple ]	name	s
submission-time	date/time	s
job-message-from-administrator	string	s

Attribute name	syntax	s/m
completion-time	date/time	s
job-state-reasons	type 2 enum	m
impressions-completed	cardinal	s
media-sheets-completed	cardinal	s
Job sheet Attributes (set by client)		
job-sheets	type 3 enum	s
Job Event Handling Attributes (set by client)		
notification- <del>events</del> profile (two classes of events, delivery	type 2 enum	m
<del>notification-addresses</del> (methods other than email are a problem with internet)	string	m
Job Scheduling Instructions Attributes (set by client)		
job-hold	boolean	s
job-priority	type 2 enum	s
job-print-after	date/time	s
Job-print-off-peak	type 3 enum	s
job-retention-period	cardinal	s
Document Description Attribute		
document-format	type 2 enum	s
Document Production Instruction Attributes (set by client)		
document-format	type 2 enum	s
medium-select	type 2 enum	s
number-up	type 2 enum	s
finishing	type 2 enum	s
sides	type 2 enum	s
copies	ordinal	s
printer-resolution-select	ordinal pair	s
print-quality	type 2 enum	s
page-select	ordinal pair	s
Attributes for Conversion of Text Files (set by client)		
width	ordinal	s
length	ordinal	s
left-margin	cardinal	s
right-margin	cardinal	s
top-margin	cardinal	s
bottom-margin	cardinal	s
repeated-tab-stops	ordinal	s
header-text	string	s
footer-text	string	s
number-pages	boolean	s
default-font	string	s
default-character-set	type 2 enum	s
content-orientation		s
Job Resource Attributes (set by process which produces PDL file; for use in scheduling)		
document-formats-used	type 2 enum	m
fonts-used	string	m
character-sets-used	type 2 enum	m
media-used	type 2 enum	m
sides-used	type 2 enum	s

Attribute name	syntax	s/m
print-quality-used	type 2 enum	s
finishings-used	type 2 enum	m
printer-resolution-used	ordinal pair	s
total-job-octets	cardinal	s
job-impression-count	cardinal	s
job-media-sheet-count	cardinal	s
Document Contents (one per document)		
number-of-documents	cardinal	s
document-content (actual contents or a path reference)	octet string or url	m?
<del>ISSUE - or make two attributes?</del>		
Operation Attributes		
operation-locale	type 2 enum	s
default-delivery-addresses	string	m
Printer Attributes (Print Servers and Output Devices)		
printer-name	name	s
printer-location	string	s
printer-model	string	s
printer-types	type 2 enum	m
printer-state	type 1 enum	s
printer-state-message	string	s
message	string	s
notification-events-profile	type 2 enum	m
<del>notification-addresses</del>	string	m
<del>access-control-list</del>		
fonts-supported	string	m
font-substitutions-supported	string pairs	m
media-supported	type 2 enum	m
document-formats-supported	type 2 enum	m
numbers-up-supported	type 2 enum	m
finishings-supported	type 2 enum	m
sides-supported	type 2 enum	m
print-qualities-supported	type 2 enum	m
maximum-printer-speed	string units	s
printer-resolutions-supported	string units	m
<del>delivery-methods-supported</del>		
character-sets-supported	type 2 enum	m
job-sheets-supported	type 2 enum	m
maximum-copies-supported	ordinal	s
maximum-job-octets	ordinal	s
maximum-job-retention-period	cardinal	s
maximum-end-user-job-priority	ordinal	s
maximum-impressions	ordinal	s
maximum-media-sheets	ordinal	s
off-peak-times-supported	type 2 enum	m
<del>notification-delivery-methods-supported</del>		
downstream-printers	name	m
notification-events-supported	type 2 enum	m
locales-supported??	type 2 enum	m
locale??	type 2 enum	s
<del>sheet-count</del>		

Attribute name	syntax	s/m
<del>printer timeout period</del>		
Job Template (attributes from the following sections of Job)		
Job sheet Attributes		
Job Event Handling Attributes		
Job Scheduling Instructions Attributes		
<del>except not job-print-after</del>		
Document Production Instruction Attributes		
Attributes for Conversion of Text Files		

The following is the list of attributes with revisions as they appeared in the Nov 11, 1996 0.9 version that Bob Herriot produced:

This section describes the attributes and their associated values that are part of the LDPA protocol. The list below shows the objects and their attributes that are included within the scope of this protocol:

#### Job Attributes

##### Job Informational Attributes (set by client)

~~job-identifier~~

job-~~owner~~originator (an authenticated value)

job-name

job-originating-host

##### Job Informational Attributes (set by Printer)

~~job-identifier~~

job-identifier-on-output-device (used by operator)

##### Printer Selection Attributes (set by client)

printer-name-requested

output-device-requested

##### Job Status Attributes (set by Printer)

current-job-state

printers~~s~~-assigned [ let's keep it simple ]

submission-time

~~print-checkpoint~~

job-message-from-administrator

completion-time

job-state-reasons

impressions-completed

media-sheets-completed

~~number-of-documents~~

~~job-submission-complete~~

##### Job sheet Job Results Handling Attributes (set by client)

job-sheets

~~document-sheets~~

##### Job Event Handling Attributes (set by client)

notification-profile (two classes of events, delivery

methods other than email are a problem with internet)

##### Job Scheduling Instructions Attributes (set by client)

job-hold

job-priority

~~job-print-after~~

Job-print-off-peak

job-retention-period

90 | ~~Document Attributes~~  
 91 | Document Description Attribute  
 92 |     document-format  
 93 |     ~~document-content~~  
 94 |     ~~transfer-method~~  
 95 |     — Document Production Instruction Attributes (set by client)  
 96 |         document-format  
 97 |         ~~default-font~~  
 98 |         ~~default-medium-select~~  
 99 |         number-up  
 100 |         finishing  
 101 |         sides  
 102 |         ~~copies-copy-count~~  
 103 |         ~~reset-printer~~  
 104 |         ~~printer-resolution-select~~  
 105 |         ~~print-quality~~  
 106 |         ~~page-select~~  
 107 |     Attributes for Conversion of Text Files (set by client)  
 108 |         width  
 109 |         length  
 110 |         left-margin  
 111 |         right-margin  
 112 |         top-margin  
 113 |         bottom-margin  
 114 |         repeated-tab-stops  
 115 |         header-text  
 116 |         footer-text  
 117 |         number-pages  
 118 |         default-font  
 119 |         default-character-set  
 120 |         content-orientation  
 121 |     Job Resource Document Characteristics Attributes (set by  
 122 |         process which produces PDL file; for use in scheduling)  
 123 |         ~~document-format-used~~  
 124 |         fonts-used  
 125 |         ~~character-sets-used~~  
 126 |         media-used  
 127 |         sides-used  
 128 |         ~~print-quality-used~~  
 129 |         ~~finishing-used~~  
 130 |         ~~printer-resolution-used~~  
 131 |         total-job-octets  
 132 |         job-impression-count  
 133 |         job-media-sheet-count  
 134 |     ~~Document Status Attributes~~  
 135 |     ~~document-sequence-number~~  
 136 |     Document Contents (one per document)  
 137 |         number-of-documents  
 138 |         ~~document-content~~ (actual contents or a path reference)  
 139 |     Operation Attributes  
 140 |         operation-locale  
 141 |         default-delivery-addresses  
 142 |     Printer Attributes (Print Servers and Output Devices)  
 143 |         printer-name  
 144 |         ~~printer-location~~  
 145 |         ~~printer-model~~  
 146 |         ~~printer-types~~  
 147 |         printer-state  
 148 |         ~~printer-state-message~~  
 149 |         message

150        notification-profile  
151        access-control-list  
152        ~~printer initial value job~~  
153        ~~printer initial value document~~  
154        fonts-supported  
155        font-substitutions  
156        ~~fonts-ready~~  
157        media-supported  
158        ~~media-ready~~  
159        ~~printer associated printers~~  
160        document-formats-supported  
161        numbers-up-supported  
162        finishings-supported  
163        sides-supported  
164        print-qualities-supported  
165        maximum-printer-speed  
166        printer-resolutions-supported  
167        delivery-methods-supported  
168        character-sets-supported  
169        job-sheets-supported  
170        ~~document sheets supported~~  
171        maximum-copies-supported  
172        maximum-job-octets  
173        maximum-job-retention-period  
174        maximum-job-priority  
175        maximum-impressions  
176        maximum-media-sheets  
177        off-peak-times  
178        notification-delivery-methods-supported  
179        ~~server name~~  
180        ~~server state~~  
181        downstream-printers  
182        ~~physical printers supported~~  
183        ~~logical printers supported~~  
184        events-supported  
185        ~~transfer methods supported~~  
186        locales-supported  
187        locale  
188        ~~multiple documents supported~~  
189        ~~cancel individual document supported~~  
190        ~~modify individual document supported~~  
191        sheet-count  
192        printer-timeout-period  
193        ~~Initial Value Job Attributes~~  
194        ~~Initial Value Document Attributes~~  
195        Job Template (attributes from the following sections of Job)  
196        Job sheet Attributes  
197        Job Event Handling Attributes  
198        Job Scheduling Instructions Attributes  
199        Document Production Instruction Attributes  
200        Attributes for Conversion of Text Files  
201  
202