

Working Draft, May 27, 2003

Maturity Level: Development

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The Printer Working Group (PWG) Standard for Internet Printing Protocol (IPP): Page Overrides

Abstract: This IPP specification extends the IPP Model and Semantics [rfc2911] object model by relaxing the restriction that each attribute value is the same for all pages within a Document. For example, with this extension, page 1 of a job could have a different media from the other pages in the job.

This extension supports page Overrides by adding a new Template attribute: “overrides” – it has a syntax type of “1setOf collection”. Each ‘collection’ value contains attributes that identify the attributes to override and its associated value as well as the range of pages for the override. The range of pages is specified by the “document-copies” attribute and the “pages” attribute to allow overrides of pages in specific copies of the document.



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This version of the PWG Proposed Standard is available electronically at:

ftp://www.pwg.org/pub/pwg/ipp/new_EXC//wd-ippOverride10-20030527.pdf, .doc

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Title: The Printer Working Group Standard for the Internet Printing Protocol (IPP): Page Overrides

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Table of Contents

1	Introduction	7
2	Terminology.....	7
2.1	Conformance Terminology.....	7
2.2	Other Terminology.....	8
2.2.1	Attribute Precedence.....	8
2.2.2	Honor.....	8
2.2.3	Impression	8
2.2.4	Job Creation operation.....	8
2.2.5	Overrides.....	8
2.2.6	Page:.....	8
2.2.7	Sheet.....	8
3	Requirements	9
4	Overview.....	9
4.1	Numbering of Components.....	9
5	New Job Template Attributes.....	9
5.1	overrides (1setOf collection).....	10
5.1.1	Document-numbers (1setOf rangeOfInteger (1:MAX)).....	11
5.1.2	document-copies (1setOf rangeOfInteger (1:MAX))	11
5.1.3	Pages (1setOf rangeOfInteger(1:MAX)).....	12
5.1.4	Overriding template attributes	12
5.1.5	Handling of Error conditions	14
5.1.6	Why not “overrides-default”.....	14
5.1.7	overrides-supported (1setOf type2 keyword).....	14
5.2	Subset Processing	14
6	Examples.....	15
6.1	First Page of Single Document is Letterhead	15
6.1.1	Request.	15
6.2	First Page of Several Documents is Blue.....	16
6.2.1	Request.	16
7	Conformance Requirements	16
8	IANA Considerations	17
8.1	Attribute Registration.....	17
8.2	Keyword Attribute Value Registrations	18
9	Internationalization Considerations.....	18
10	Security Considerations.....	18
11	References	18
12	Author's Addresses	19

13 Change Log (informative).....20

14 Appendix 1 Changes from IEEE ISTO 5100.4-200120

1 Introduction

The Internet Printing Protocol (IPP) is an application level protocol for distributed printing using Internet tools and technologies. IPP version 1.1 (IPP/1.1) requires that each attribute value be the same for all pages within a document within a job. This document defines OPTIONAL extensions to the IPP/1.1 model which relax this restriction and allow pages to have attributes that are overrides. For example, with this extension, page 1 of a Document could have a different media or different value of “sides” from the other pages in the document. Another example is that the 1st copy of the Document could be printed single sided on transparency and the remaining copies printed 4-up two sided and stapled. Page overrides always applies to pages within a document without regard to the “multiple-documents-handling” attribute.

This extension supports page overrides by adding a new Template attribute: “overrides” -- having a syntax type of “1setOf collection”. Each ‘collection’ value for “overrides” contains

A CONDITIONALLY MANDATORY member attribute that identifies the documents containing the overridden pages, namely “document-numbers”. This attribute MUST be supplied if the Override is specified as a Job Template attribute and the Overrides apply only to specific Documents. If this member attribute is not supplied, the Override applies to all Documents in the Job.

A MANDATORY member attribute that identifies the overridden pages, namely “pages”.

an OPTIONAL member attribute that identifies the document copies of the specified documents, i.e. “document-copies”. If this member attribute is absent, the Overrides apply to all document copies.

The ‘collection’ value also contains one or more attributes that are overrides for the identified pages, e.g. “sides” and “media”.

This document is a proposal for an extension to IPP/1.0 and IPP/1.1. This document replace the deprecated “Override Attributes for Documents and Pages document” [PWG5100.4]. This specification provides overrides at the page level. The “overrides” Job Template attribute defined in this specification replaces the deprecated “page-overrides” Job Template attribute. Other specification outside the scope of this document provide the remaining features from the deprecated specification such as “document-overrides”, “pages-per-subset”, and “job-warnings-count”. See appendix ZZZ for details.

2 Terminology

This section defines the following additional terms that are used throughout this document:

2.1 Conformance Terminology

Capitalized terms, such as **MUST**, **MUST NOT**, **REQUIRED**, **SHOULD**, **SHOULD NOT**, **MAY**, and **OPTIONAL**, have special meaning relating to conformance as defined in RFC 2119 [rfc2119]. If an implementation supports the extension defined in this document, then these terms apply; otherwise, they do not. These terms define conformance to *this document (and [rfc2911]) only*, they do not affect conformance to other documents, unless explicitly stated otherwise. For example, the term REQUIRED in this document means “REQUIRED if this OPTIONAL Override specification is implemented”.

The term **CONDITIONALLY REQUIRED** means that the Printer **MUST** support the feature, if the specified condition is true. The term **CMUST** means **MUST** if the specified "condition" is true.

2.2 Other Terminology

This document uses the same terminology as [rfc2911], such as "client", "Printer"¹, "attribute", "attribute value", "keyword", "Job Template attribute", "Operation attribute", "operation", "request", "response", and "support" with the same meaning. In addition, the following terms are defined for use in this document:

2.2.1 Attribute Precedence

the precedence rules which dictate which attribute value takes precedence when the same attribute is supplied at different points in the workflow with different values, such as at both a simple **Job Template** and in an "override" Job Template attribute. **See section Error! Reference source not found..**

2.2.2 Honor

a Printer is said to **Honor** an attribute supplied by the client, if the Printer **supports** that attribute and the supplied value and performs the indicated semantics. If the client supplies the "ipp-attribute-fidelity" or "job-mandatory-attributes" Operation attribute, the client is indicating which supplied Job Template and Document Template attributes the Printer **MUST Honor**.

2.2.3 Impression

An "impression" is the image (possibly many print-stream pages in different configurations) imposed onto a single side of a media sheet. see [RFC2911] section 12.2.5)

2.2.4 Job Creation operation

operations that create Job objects, specifically: Print-Job, Print-URI, and Create-Job as defined in [rfc2911].

2.2.5 Overrides

In IPP/1.1 each attribute value is the same for the entire Job. When an attribute is an "Overrides" attribute, it is different for identified pages. Pages can be identified within a Document or a specific copy of a Document.

2.2.6 Page:

The term "Page" as a synonym for print-stream page. A "print-stream page" is a page according to the definition of pages in the language used to express the document data. (see [RFC2911] section 12.2.4)

2.2.7 Sheet

A Sheet is the unit of media that a printer puts marks on. It is the most basic unit of output from a printer. A printer may mark on one side or on both sides of a sheet.

¹ [rfc2911] uses the terms "Printer object" and "Printer" interchangeably to mean the same thing. For simplicity, this document uses the term "Printer" exclusively, except for definitions copied directly from [rfc2911]. None the less, the intent is as in [rfc2911]: a Printer is an object that MAY be hosted in the device or in a server as in [rfc2911].

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3 Requirements

The following is a list of requirements for the Overrides-Extension.

1. There **MUST** be a mechanism for specifying Job Template attributes that are Overrides for particular pages. A Printer and a client **OPTIONALLY** support this mechanism.
2. There **MUST** be a mechanism for specifying Job Template attributes that are Overrides for particular pages in specific copies of Documents. A Printer and a client **OPTIONALLY** support this mechanism.
3. The mechanism for Overrides **MUST** be supported by all Job-Submission operations and Validate-Job.

4 Overview

In IPP 1.1 all attributes that a client includes with job creation operations affect the entire Job in a uniform way. That is, there is no way for one Document in a given Job to be stapled and another drilled. Also, there is no way for the first sheet of each Document to be on a different media or to have a different value of “sides” from the other Sheets in the Document. In addition, there is no way for one document copy to be printed on paper and another on transparencies. An IPP/1.1 client can specify features, such as finishing, media and sides only at the job level.

The Override Extension defined in this document allows some pages, to be affected by attribute values that are Overrides to those specified for the Job as a whole. For example, the first page of a Document has a different media from the rest.

4.1 Numbering of Components

The Override Extension defines a system for numbering of components.

- Each Document has a number. The single Document that a client sends with Print-Job or Print-URI and the first Document that a client sends with Send-Document or Send-URI has a number of 1. Each subsequent Document that a clients sends has a number that is one higher than the previous.
- Each Page in a Document is numbered sequentially, starting at 1 for the first Page. If a Job has several Documents, the first Page of each Document has the number of 1.
- The Documents are numbered as if the value of “copies” were 1, i.e. if a Document produces multiple copies, each copy has the same document number.
- Each copy of a Document has a number. The first copy of each Document has a number of ‘1’, and each subsequent copy has a number that is one higher than the previous copy.

5 New Job Template Attributes

The Override Extension adds a new Job Template attributes: “overrides”. The “overrides” attribute supercedes the “page-overrides” from PWG51000.4

Job Template Attribute	Printer: Default Value Attribute	Printer: Supported Values Attribute
overrides	none	overrides-supported
(1setOf collection)		(1setOf type2 keyword)

5.1 overrides (1setOf collection)

This OPTIONAL Job Template attribute contains attributes that are associated with Pages and that are treated as page Overrides. Such attributes are called “Overrides” attributes. The remainder of this section describes features that an implementation MUST support or MAY support if an implementation supports this attribute

If this attribute is present in a Job, there are Page Overrides. If it is present, the value consists of one or more ‘collection’ values, where each ‘collection’ value identifies one or more Pages and contains one or more Job Template attributes which act as Overrides to the corresponding Template attribute(s) for the specified Page(s) in the Job.. Paage Overrides are specified by including the “overrides” attribute in the Job Template attributes group in a PrintJob, CreateJob or SetJob operation

The first attribute CMUST be the “document-numbers”. The condition is if the applies only to specific Documents. If this attribute is not supplied, the Override applies to all Documents in the Job

The second attribute MAY be “document-copies”. If present, this attributes identifies the copies of the Document. If this attribute is not present, then the Override applies to all copies of the Document.

If “document-number” and “document-copies” is present, the “pages” attribute MUST be the third attribute; if either “document-number” or “document-copies” attribute is present, the “pages” attribute MUST be the second attribute; otherwise, it MUST be the first attribute. The “pages” attribute identifies the pages to which the Override applies. The identified pages need not be contiguous. ISSUE01: We need to decide whether overlapping overrides regions are allowed, or whether to be simple, the client MUST specify non-overlapping regions. The latter would be a great simplification We must also keep in mind that with the document object overrides can occur at both the job and document level.<PZ> I prefer a SHOULD NOT overlap and specify that overrides are ordered and the later an override is specified the higher the precedence. (to resolve any direct conflicts)</PZ>

The remaining attributes in the ‘collection’ value are the Template attributes that are Overrides for the specified pages.

There may be more than one way for a client to arrange ‘overrides’ attributes in ‘collection’ values. For example, if a Document contains 10 pages to be printed 1-sided on white letter paper and page 1 is to be two sided with blue letter paper and Document 2 is to be two sided with white letter paper, there is more than 1 possible way to group the Overrides. The client could specify the two Overrides for page 1 in one ‘collection’ value and the single Override for Page 2 in second ‘collection’ values, or it could specify “two-sided” for pages 1 and 2 in one ‘collection’ value and “blue letter paper” for Document 1 in another ‘collection’ value

If the “document-number”, “document-copies” and “pages” identify pages that either don’t exist or are within nonexistent Document-Copies or Documents, the Printer silently ignores them and associates the Overrides with the pages that do exist. A client MUST not allow two ‘collection’s values to be associated with the same page and to

contain the same Override attribute with different values. If there is such a conflict, the Printer can use either value, and it MUST issue a warning. It does so by adding 'job-warnings-detected' to the "job-state-reasons" and by increasing the value of the "job-warnings-count" Job Description attribute by 1. If the Printer detects this conflict while it is processing a Job-Submission operation, it MUST return the ignored value in the Unsupported attributes.

When a Client receives this attribute in a Get-Jobs or Get-Job-Attributes, the value MUST contain the same 'collection' values received in Job-Submission operations, except for those 'collection' values the Printer returned in the Unsupported Attributes.

To allow the specification of the last page, copy or document the MAX integer value (2147483647) is used. To allow the specification of the page, copy or document before the last a special value of MAX-1(2147483646) is used. No other special values are defined.

Attribute name	syntax	In request	Printer Support
document-numbers	1setOf rangeOfInteger(MAX)	MAY	MUST
document-copies	1setOf rangeOfInteger(MAX)	MAY	MAY
pages	1setOf rangeOfInteger(MAX)	MUST	MUST
Any template attribute		MAY	MAY

The following sections describe each member attribute in the above table.

5.1.1 Document-numbers ([1setOf](#) rangeOfInteger (1:MAX))

This attribute identifies one or more Documents by specifying a range of numbers. The Overrides apply to the pages within the Documents specified.

A Printer MUST support this attribute. A client MAY supply this attribute in each 'collection' value. If supplied, it MUST be the first attribute of each 'collection' value.

Note: To allow the specification of the last document the MAX integer value (2147483647) is used. To allow the specification of the next to last document a special value of MAX-1(2147483646) is used. No other special values are defined.

5.1.2 document-copies ([1setOf](#) rangeOfInteger (1:MAX))

This attribute identifies one or more Document-Copies by specifying a range of numbers. The Overrides apply to the pages within the identified Documents-Copies within the Documents specified. For example, 10 copies are duplex printed on letter paper with a staple. One copy is simplex printed on transparencies without a staple.

If an attribute can affect a Document, it can affect particular Document-Copies. If an attribute can affect Sheets, it can affect Sheets of particular Document-Copies.

A Printer MUST support this attribute. A client MAY supply this attribute in each 'collection' value. It MUST be the second attribute of each 'collection' value if the client supplied "document-numbers"; otherwise it MUST be first.

Note: To allow the specification of the last document copy the MAX integer value (2147483647) is used. To allow the specification of the next to last document copy a special value of MAX-1(2147483646) is used. No other special values are defined.

5.1.3 Pages (1setOf rangeOfInteger(1:MAX))

This attribute identifies one or more pages by specifying one or more ranges of numbers (see section 4.1 for the rules on associating a number with each page). The "1setOf" allows noncontiguous pages. The Overrides apply to the identified pages within the Documents specified. The "document-copies" specifies particular copies of the Documents.

If the "page-ranges" attribute is associated with a Document, the pages identified by this attribute are the same as when "page-ranges" is not present. However, this attribute may identify pages that are deselected for printing by the "page-ranges" attribute. For example, if the value of "page-ranges" is "5:10" and this attribute identifies pages "3:6", this attribute identifies two pages (3 and 4) that are not printed and two that are (5 and 6)

If a Printer support the "overrides" attribute, it MUST support this attribute. A client MUST supply this attribute in each 'collection' value of the "overrides" attribute and it MUST be the second attribute of each 'collection' value.

Note: To allow the specification of the last page the MAX integer value (2147483647) is used. To allow the specification of the next to last page a special value of MAX-1(2147483646) is used. No other special values are defined.

5.1.4 Overriding template attributes

These attributes have the same meaning as in IPP/1.1. Any template attribute supported by the printer may be supplied. Only those supported attributes that affect pages will be honored. For example an Override that specifies "job-priority" will ignore "job-priority" The Printer MAY support this attribute. A client OPTIONALLY supplies it.

5.1.4.1 Template Attributes that affect Jobs

Template Attributes that operate on a Job such as "job-priority" and "job-hold-until" and are meaningless as a page override. These attributes SHOULD NOT be included in "overrides". If included, they follow the same rules as any template attributes and interact with "ipp-attribute-fidelity" as specified in rfc2911. Therefore if "ipp-attribute-fidelity" is false, the request should succeed and any Job Template attributes that affect Jobs SHOULD be returned in "unsupported-attributes". If "ipp-attribute-fidelity" is true, then the request should fail and the Job Template attributes that affect Jobs SHOULD be returned in "unsupported-attributes".

5.1.4.2 Template Attributes that affect Documents

Template Attributes that operate on a Document such as "copies" are meaningless as a page override. These attributes SHOULD NOT be included in "overrides". If included, they follow the same rules as any template attributes and interact with "ipp-attribute-fidelity" as specified in rfc2911. Therefore if "ipp-attribute-fidelity" is false, the request should succeed and any Job Template attributes that affect Jobs SHOULD be returned in "unsupported-attributes". If "ipp-attribute-fidelity" is true, then the request should fail and the Job Template attributes that affect Jobs SHOULD be returned in "unsupported-attributes".

5.1.4.3 Template Attributes that affect Pages

Template Attributes that operate on a Pages such as “page-ranges” are appropriate as a page override. These attributes MAY be included in “overrides”. If included, they follow the same rules as any template attributes and interact with “ipp-attribute-fidelity” as specified in rfc2911. Therefore if “ipp-attribute-fidelity” is false, the request should succeed and any Job Template attributes that affect Jobs SHOULD be returned in “unsupported-attributes”. If “ipp-attribute-fidelity” is true, then the request should fail and the Job Template attributes that affect Jobs SHOULD be returned in “unsupported-attributes”.

When a attribute that affects Pages (such as black-overprint, color-emulation, trapping, etc.) makes a change of value from one override to the next, the next page image is placed where the next page image would go.

5.1.4.4 Template Attributes that affect Impressions

Template Attributes that operate on a Impressions such as “image-shift” are appropriate as a page override. These attributes MAY be included in “overrides”. If included, they follow the same rules as any template attributes and interact with “ipp-attribute-fidelity” as specified in rfc2911. Therefore if “ipp-attribute-fidelity” is false, the request should succeed and any Job Template attributes that affect Jobs SHOULD be returned in “unsupported-attributes”. If “ipp-attribute-fidelity” is true, then the request should fail and the Job Template attributes that affect Jobs SHOULD be returned in “unsupported-attributes”.

When an Impression attribute (such as image-shift) makes a change of value from one override to the next, the Printer moves onto the next Impression (on the next Surface).

5.1.4.5 Template Attributes that affect Sheets

Template Attributes that operate on a Shhets such as “media” are appropriate as a page override. These attributes MAY be included in “overrides”. If included, they follow the same rules as any template attributes and interact with “ipp-attribute-fidelity” as specified in rfc2911. Therefore if “ipp-attribute-fidelity” is false, the request should succeed and any Job Template attributes that affect Jobs SHOULD be returned in “unsupported-attributes”. If “ipp-attribute-fidelity” is true, then the request should fail and the Job Template attributes that affect Jobs SHOULD be returned in “unsupported-attributes”.

When a Sheet attribute (such as media) makes a change of value from one override to the next, it forces the first page of the override onto the first side of a new sheet.

ISSUE02: However, if the none of the sheet attributes in two adjacent overrides change the value, then the pages continue on the same sheet(as in JDF)? Or do we want to say that if the following override has any attribute that affects a sheet, whether the value is the same or different than the previous override, then new sheets are forced.<PZ> it requires a change for a new sheet</>

ISSUE03: Or do we want to be more simple and just rely on the client supplying the "force-front-side" Job Template attribute to force a new sheet when it isn't otherwise required just to make sure?<PZ>NO</>

ISSUE04: Do we need a new "force-new" (page, surface, sheet, document) member attribute?<PZ>NO</>

5.1.5 Handling of Error conditions

If a client puts a member attribute in some position other than its required position (e.g. “document-numbers” MUST be first), a Printer MUST either:

- a) use the specified value of the member attribute and ignore its wrong position or
- b) reject all attributes in the ‘collection’ value and treat the ‘collection’ values, but not other sibling ‘collection’ values, as unsupported.

5.1.6 Why not “overrides-default”

There is no “overrides-default” attribute because it adds complicated rules for a Printer to implement. The problems are best illustrated with examples.

If there were a “overrides-default” and it contained a “sides” and “media” override for the first page, and if a client submitted a Job with no “sides” attribute and with “media” as a Job Template attribute with no overrides, a possible meaning is that the Printer uses the client’s requested media for the entire Job and the sides specified by the “sides-default” and the “sides” value in “overrides-default”. So in this example, the Printer ignores the “overrides-default” attribute for “media”, but uses it for “sides” because the Printer uses it for an attribute “xxx” only when it uses “xxx-default”.

5.1.7 overrides-supported (1setOf type2 keyword)

This attribute specifies the supported values of the “overrides” attribute. A client can use this attribute to determine what override attributes the Printer supports.

This attribute contains the name of each attribute that the Printer supports in a ‘collection’ value of the “overrides” attribute. This attribute MUST contain the keywords “document-numbers” and “pages” because a Printer MUST support these attributes. This attribute MUST contain the keywords “document-copies” if the Printer supports overriding of individual copies of a Document. This attribute MUST also contain the name of each attribute that can be a page-override. For example, this attribute contains the keyword “sides” if and only if the Printer supports “sides” in a ‘collection’ value of the “page-overrides” attribute.

There are no corresponding “document-numbers-supported”, “document-copies-supported”, and “pages-supported” Printer attributes. However, the supported values for all of the other member attributes are indicated by the corresponding “xxx-supported” Printer attributes which are the same values as for the corresponding “xxx” operation or Job/Document Template attribute. For example, if “sides” is supported as a member attribute of the “override” collection, then the “sides-supported” Printer attribute indicates the values that are supported at the job level and as an Override.

5.2 Subset Processing

ISSUE05: How should 5100.4-2001 “pages-per-subset” be accommodated in new specifications. Proposal is not to merge subset processing and overrides together. The solution models subset processing as a Job Template attribute that optionally reuses the overrides feature.

WORK ITEM: PJZ This section to be “wordsmithed” to describe replacement for 5100.4-2001 pages-per-subset feature without complicating the new simplified page override(i.e. “overrides”) feature.

Key Points:

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1. new Job Template attribute “subset-processing”
 - a. contains Mandatory member attribute “pages-per-subset” (1 setof rangeOfInteger) (same semantics as 5100.4-2001)
 - b. contains optional member attribute “overrides” (allows subset overrides)
 - c. Page numbering is affected by “multi-document-handling”
 - d. Allows page subsets to cross document boundaries
 - e. Separates subset processing from overrides

A client OPTIONALLY supplies this attribute, and a Printer OPTIONALLY supports this attribute. When this attribute is present, it effectively partitions one or more Documents into contiguous subsets of Pages. Each subset is defined to be a subset Document. The value of the attribute is a set of one or more integers, where each integer specifies the number of Pages in a subset, and the set is treated as a repeating sequence of integers. Thus, when the attribute contains a single integer, the integer specifies the number of Pages in each subset, as a repeating sequence of the single integer. When the number of integers in this attribute exceeds 1, the first integer specifies the number of Pages in the first subset, the second integer specifies the number of Pages in the second subset and so on. If numbers in this attribute are exhausted before partitioning all of the Pages, the Printer starts at the beginning of the sequence again and continues until all Input-Pages are partitioned.

6 Examples

This section currently contains examples Overrides.
 Brackets are used to delimit the beginning and end of each Collection value.

6.1 First Page of Single Document is Letterhead

In the first example, the Printer produces 1 copy of a single Document. It is printed on letter-paper using Print-Job. The first Page of the Document is letterhead paper.

6.1.1 Request.

There is one Document A which produces one Document.

```
Print-Job
  job template attributes group
    media: letter
    overrides: {
      documents-numbers: 1:1
      pages: 1:1
      media: letterhead }
  end-of-attributes
  Document A
```

6.2 First Page of Several Documents is Blue

In the second example, the Printer produces 3 copies of each Document. Each is stapled and printed on letter-paper, two-sided using Create-Job. The first Page of each Document is blue-letter paper and one-sided.

6.2.1 Request.

There are two Documents A and B.

```

Create-Job
  operations attributes group
    document-format: application/PostScript
  job template attributes group
*   multiple-document-handling: separate-documents-collated-copies
    sides: two-sided-long-edge
    media: letter
    copies: 3
    finishings: stapling
    page-overrides: {
      document-numberss: 1:2
      pages: 1:1
      sides: one-sided
      media: blue-letter }
  end-of-attributes
Send-Document
  end-of-attributes
  Document A
Send-Document
  end-of-attributes
  Document B
    
```

7 Conformance Requirements

This section specifies the Conformance Requirements.

This specification describes overriding attributes on a particular page . If a Client or Printer supports this specification, it MUST support this mechanisms.

The following are the conformance rules for Overrides. See section 5.1 for further details on Overrides

1. If a Printer or Client supports Overrides, it MUST support
 - 1.1. the “overrides” attribute, and

- 1.2. the “overrides-supported” attribute, and
- 1.3. the following member attributes of “overrides”:
 - 1.3.1. “document-numberss”,
 - 1.3.2. “pages”, and
 - 1.3.3. at least one Job Template attribute that can be overridden (e.g. “sides” or “media”) as defined in another specification.

A conforming Printer MUST handle unsupported attributes correctly. If a Printer receives a “overrides” attribute that contains one or more unsupported member, it MUST return in the Unsupported Attributes group of the response the “overrides” attribute with the unsupported members attributes. The “ipp-attribute-fidelity” determines whether the Printer

- a) rejects the Job or
- b) accepts the Job and ignores the unsupported member attributes.

A Client or a Printer OPTIONALLY supports the “document-copies” attribute as a member attribute of “overrides”. If a Printer does not support the “document-copies” member attribute and receives it in a “page-overrides”, it treats the “document-copies” attributes as described in the previous paragraph. If the Printer accepts the Job, it behaves as if the overrides applied to all copies of the specified documents or pages, i.e. the way the Printer would behave if it supported “document-copies” and the client didn’t supply it.

8 IANA Considerations

This section contains the exact information for IANA to add to the IPP Registries according to the procedures defined in RFC 2911 [RFC2911] section 6.

8.1 Attribute Registration

The attributes defined in this document will be published by IANA according to the procedures in RFC 2911 [RFC2911] section 6.2 with the following path:

[ftp.isi.edu/iana/assignments/ipp/attributes/](ftp://ftp.isi.edu/iana/assignments/ipp/attributes/)

The registry entry will contain the following information:

Reference IEEE-ISTO 5100.n:
<ftp://ftp.pwg.org/pub/pwg/standards/pwg5100.n.pdf>

Job Template attributes:		Section:
overrides (1setOf collection)		5.1
overrides (1setOf collection)	5.1.1	
overrides (1setOf collection)	5.1.2	
overrides (1setOf collection)		5.1.3

8.2 Keyword Attribute Value Registrations

The keyword attribute values defined in this document will be published by IANA according to the procedures in RFC 2911 [RFC2911] section 6.1 with the following path:

`ftp.isi.edu/iana/assignments/ipp/attribute-values/`

The registry entry will contain the following information:

Reference IEEE-ISTO 5100.4:

`ftp://ftp.pwg.org/pub/pwg/standards/pwg5100.4.pdf`

9 Internationalization Considerations

The IPP extensions defined in this document require the same internationalization considerations as any of the Job Template attributes defined in IPP/1.1 [RFC2911].

10 Security Considerations

The IPP extensions defined in this document require the same security considerations as any of the Job Template attributes defined in IPP/1.1 [RFC2911].

11 References

[RFC2026]

Bradner, S., "The Internet Standards Process -- Revision 3", RFC 2026, October 1996.

[RFC2565]

Herriot, R., Butler, S., Moore, P. and R. Turner, "Internet Printing Protocol/1.0: Encoding and Transport", RFC 2565, April 1999.

[RFC2566]

deBry, R., Hastings, T., Herriot, R., Isaacson, S. and P. Powell, "Internet Printing Protocol/1.0: Model and Semantics", RFC 2566, April 1999.

[RFC2910]

Herriot, R., Butler, S., Moore, P., Turner, R. and J. Wenn, "Internet Printing Protocol/1.1: Encoding and Transport", RFC 2910, September 2000.

[RFC2911]

Hastings, T., Herriot, R., deBry, R., Isaacson, S. and P. Powell, "Internet Printing Protocol/1.1: Model and Semantics", RFC 2911, September 2000.

[PWG5100.4]

Herriot, R., Ocke, K., "Internet Printing Protocol (IPP): Override Attributes for Documents and Pages", IEEE-ISTO 5100.4-2001, February 7, 2001, `ftp://ftp.pwg.org/pub/pwg/standards/pwg5100.4.pdf`.

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[DocObj]

Hastings, T., Zehler, P., " The Printer Working Group (PWG) Standard for The Internet Printing Protocol (IPP): Document Object ", IEEE-ISTO PWG Working Draft, May 9, 2003,
ftp://www.pwg.org/pub/pwg/ipp/new_DOC/wd-ippdoc10-20030509.pdf.

12 Author's Addresses

Peter Zehler
Xerox Corporation
MS: 0128-30E
800 Phillips Road
Webster, NY 14580-9701

Phone: 585 265-8755
Fax: 585 422-7961
e-mail: PZehler@crt.xerox.com

Robert Herriot
Xerox Corp.
3400 Hill View Ave, Building 1
Palo Alto, CA 94304

Phone: 650-813-7696
Fax: 650-813-6860
e-mail: robert.herriot@pahv.xerox.com

Kirk Ocke
Xerox Corporation
800 Phillips Road
Webster, NY 14580

Phone: 716-422-4832
e-mail: Kirk.Ocke@usa.xerox.com

IPP Web Page: <http://www.pwg.org/ipp/>
IPP Mailing List: ipp@pwg.org

To subscribe to the ipp mailing list, send the following email:

- 1) send it to majordomo@pwg.org
- 2) leave the subject line blank
- 3) put the following two lines in the message body:
subscribe ipp
end

Implementers of this specification document are encouraged to join IPP Mailing List in order to participate in any discussions of clarification issues and review of registration proposals for additional attributes and values.

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Other Participants:

Ron Bergman - Hitachi Koki Imaging Systems
Weihai Chen - Microsoft
Satoshi Fujitani - Ricoh
Tom Hastings - Xerox
David Kellerman - Northlake Software
Harry Lewis - IBM
Satoshi Matsushita - Brother
Paul Moore - Netreon
Stuart Rowley - Kyocera
Geoff Sorod - Software 2000
Shinichi Tsuruyama - Epson
Shigeru Ueda - Canon
Mark Vander Wiele - IBM
Michael Wu - Heidelberg Digital

Dan Calle - Digital Paper
Lee Farrell - Canon Information Systems
Roelof Hamberg - Océ
Bob Herriot - Xerox
Carl Kugler - IBM
Carl-Uno Manros - Xerox
Ira McDonald - High North Inc.
Hugo Parra, Novell
Gail Songer - Netreon
Jerry Thrasher - Lexmark
Atsushi Uchino - Epson
William Wagner - NetSilicon/DPI
Don Wright - Lexmark
Peter Zehler - Xerox

13 Change Log (informative)

The following summaries of the changes in reverse chronological order:

Version May 9 2003:

1. Removed Document Overrides.
2. Moved warning counts and errors to another document(JobX)
3. Renamed Page Overrides to facilitate deprecation of PWG 5100.4

14 Appendix 1 Changes from IEEE ISTO 5100.4-2001

WORK Item: PJZ to fill out this section