

pdfmark Reference Manual

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1 Introduction

The Distiller is a software application that converts PostScript® language files into Portable Document Format files. The Portable Document Format (PDF) includes special features for representing document annotations (notes), hypertext links, bookmarks, and page-cropping. Normally, this information is not present in a PostScript language file and therefore cannot be produced as part of the distilling process.

This document describes the syntax and use of the **pdfmark** operator which is present in implementations of the PostScript Level 2 interpreter used by the Distiller. Using **pdfmark** enables you to represent annotation, link, bookmark, and page-cropping information in PostScript language files. This information is processed by the Distiller program and converted to corresponding annotation, link, bookmark, and page-cropping objects in the resulting PDF file. The proper use of **pdfmark** makes it possible for an Independent Software Vendor (ISV) already supporting the PostScript language to support the added value of the Portable Document Format without having to write a PDF file directly.

2 pdfmark

For each annotation, link, or bookmark desired, an entry in the PostScript language file is required. This is accomplished by a new operator named **pdfmark** which takes as its arguments a mark object, a variable number of key-value pairs, and a name object. Each instance of the **pdfmark** operator in a PostScript language file is referred to as a marker.

If a PostScript language file containing annotation, link, or bookmark markers is printed, there must be no side effects. To ensure this, the following PostScript language code should be placed in the prolog of the PostScript language file. Its effect is to make each marker a no-op if the file is printed.

```
systemdict /pdfmark known not
{userdict /pdfmark systemdict /cleartomark get put} if
```

3 Syntax

For each annotation, link, bookmark, or page-cropping object desired, a marker entry is required. The **pdfmark** procedure takes as its arguments a name, a variable number of key-value pairs, and a mark object. The syntax for using the pdfmark procedure is given below.

3.1 Annotations

Annotations are specified by using the **pdfmark** procedure in conjunction with the name ANN. The syntax for an annotation marker is:

```
[/Rect [llx lly urx ury] /Open boolean /Contents string /ANN pdfmark
```

An annotation marker entry must occur within the PostScript language description for the page on which the annotation is to appear in the PDF file.

3.2 Links

Links are specified by using the **pdfmark** procedure in conjunction with the name LNK. The syntax for a link marker is:

```
[/Rect [llx lly urx ury] /Border [bx by c] /Page pagenum  
/View [x y zoom] /LNK pdfmark
```

A link marker entry must occur within the PostScript language description for the page on which the source link button is to appear in the PDF file.

3.3 Bookmarks

A bookmark entry is specified by using the **pdfmark** procedure in conjunction with the name OUT. The syntax for a bookmark entry marker is:

```
[/Count int /Page pagenum /View [x y zoom] /Title string  
/OUT pdfmark
```

Bookmark marker entries may occur anywhere in the PostScript language file subject only to the ordering constraints imposed by the **Count** key described in the table below.

3.4 Page cropping

Page-size cropping is specified by using the **pdfmark** procedure in conjunction with the names PAGES and PAGE. The syntax for specifying the default page-size cropping for a document is:

```
[/CropBox [llx lly urx ury] /PAGES pdfmark
```

This marker can be placed anywhere in the PostScript language program, but it is recommended that it be placed at the very beginning of the file or in the Document Setup section between the document structuring conventions `%%BeginSetup` and `%%EndSetup` before any marks are placed on the page. If the Distiller is set up to produce thumbnails, incorrect thumbnails will be produced if this marker is placed at the end of the file.

The syntax for using the `PAGE` page-cropping marker to specify a page-cropping marker that overrides the default for a particular page is:

```
[/CropBox [llx lly urx ury] /PAGE pdfmark
```

This marker must be placed before the **showpage** operator for the page it is to affect.

4 Key-value definitions

The following table defines the key-value pairs used with the **pdfmark** procedure.

Table 1 *Key-value definitions*

| Key | Type | Semantics |
|-----------------|-----------------|--|
| Rect | array | Specifies in points the location and size of a rectangle relative to the lower-left corner of the page. Rect is an array of four numbers, <code>[llx lly urx ury]</code> , for the lower-left <i>x</i> , lower-left <i>y</i> , upper-right <i>x</i> , and upper-right <i>y</i> coordinates of the rectangle defining the open annotation window or link button. |
| Open | boolean | Specifies whether the annotation should be displayed opened. If the Open key is omitted or is <i>false</i> , the annotation will appear closed (as an icon). |
| Contents | string | Contains the annotation text string. The maximum length of the Contents string is 65,535 characters. |
| Border | array | Specifies in points the border properties for a link. Border is an array of three numbers, <code>[b_x b_y c]</code> , for the horizontal corner radius (<i>b_x</i>), the vertical corner radius (<i>b_y</i>), and the width (<i>c</i>) of the link border. For <i>c</i> , a value of 0 means the border is not visible. |
| CropBox | array | Specifies in points the position and size of the viewable area of the document relative to the lower-left corner of the physical page. CropBox is an array of four numbers, <code>[llx lly urx ury]</code> , for the lower-left <i>x</i> , lower-left <i>y</i> , upper-right <i>x</i> , and upper-right <i>y</i> coordinates of the rectangle defining the cropped page. |
| Page | integer or name | Specifies the destination page. If an integer value is specified, this number must reflect the position of that page in the body of the PostScript language file and must start with 1, not 0. It is equivalent to the ordinal argument for the <code>%%Page:</code> document structuring convention comment. |

The name objects **Next** and **Prev** are also valid page destination values for this key. No other named destinations are supported at this time.

If the destination page of a link is the same page, the **Page** key should be omitted. If the value of the **Page** key is 0, the bookmark or link will have a null destination.

View array **View** is an array that specifies the view to go to and is normally of the form `[x y zoom]`. *x* and *y* specify in points the distance from the lower-left corner of the page to the point that should be visible in the upper-left corner of the window. *zoom* specifies the magnification and is a real number where 1 = 100%, .5 = 50%, 1.5 = 150% magnification, etc.. If the zoom factor is zero, the current zoom of the window is maintained. The parameters *x*, *y*, and *zoom* may be replaced by a name and parameters that specify how to position the destination page in the window as described in

The information in the **Page** and **View** keys is combined by the Distiller to generate another key (**Dest**) that is written into the PDF file. See the *Portable Document Format Reference Manual* for more information on the **Dest** key.

Count integer Represents the number and visual appearance of subordinate bookmark entries. In a PDF file, an outline (bookmark) entry object contains a number of keys that refer to its parent, the next entry, the previous entry, and if it is a parent itself, the first and last entries. For **pdfmark**, the **Count** key is used to represent this intent. Using the following rules, it is straightforward to represent bookmarks with this syntax:

1. Bookmark entry markers must appear in sequential order in the PostScript language file.
2. A bookmark entry with no subordinate entries omits the **Count** key.
3. A bookmark entry with subordinate entries includes the **Count** key. The value indicates the number of subordinate bookmark entries (direct or indirect descendants) that follow. If *int* is positive, the parent bookmark entry is open; if *int* is negative, the parent bookmark is closed.

Title string Contains the bookmark-entry label. The maximum length of the **Title** string is 65,535 characters, although from a practical standpoint of reading the bookmark entry in the viewer application, a limit of 32 characters is advised.

Table 2 **View** array destination names and parameters

| Name | Parameters and semantics |
|------------|---|
| Top | <i>x y zoom</i> The parameters are the same as for a destination specification without a name. |

| | |
|-------------|---|
| Fit | <i>No parameters.</i> Fit the page to the window. |
| FitH | <i>y</i> Fit the width of the page to the window. The parameter specifies the distance from the page origin to the top of the window. |
| FitV | <i>x</i> Fit the height of the page to the window. The parameter specifies the distance from the page origin to the left of the window. |
| FitR | $x_1\ y_1\ x_2\ y_2$ Fit the rectangle specified by the parameters in the window. |
| XYZ | <i>left top zoom</i> <i>left</i> and <i>top</i> specify the distance from the origin of the page to the top left corner of the window. If <i>top</i> or <i>left</i> is null, the current value of that parameter is retained. For example, specifying a view destination of <code>/View [/XYZ null null 0]</code> will go do the specified page and retain the same horizontal and vertical offset and zoom as the current page. |

5 Example

The following example illustrates the use of the **pdfmark** operator for representing PDF link, annotation, bookmark, and page-cropping information.

Example 1: Use of marker syntax in a PostScript language file

```

%!PS-Adobe-3.0
%%BeginProlog
/bd {bind def} bind def
/fsd {findfont exch scalefont def} bd
/sms {setfont moveto show} bd
/ms {moveto show} bd
systemdict /pdfmark known not
{userdict /pdfmark systemdict /cleartomark get put } if
%%EndProlog

%%BeginSetup
%----- Page cropping -----
[/CropBox [54 403 558 720] /PAGES pdfmark
/DrawBorder {58 407 moveto 554 407 lineto 554 716 lineto 58 716
lineto closepath stroke} bd
/F1 10 /Helvetica fsd
/F2 10 /Helvetica-Oblique fsd
/F3 10 /Helvetica-Bold fsd
%%EndSetup

%%Page: 1 1

```

```

DrawBorder
(This is page 1.) 75 690 F3 sms
(Directly below this line is an annotation.) 75 670 F1 sms
%----- Annotation -----
[/Rect [ 75 525 350 650 ]
/Contents (This is an example of a note. You can type text directly
into a note or copy text from the clipboard.)
/ANN pdfmark
showpage

%%Page: 2 2
DrawBorder
(This is page 2.) 75 690 F3 sms
(Click here to go to page 3.) 75 660 F2 sms
%----- Link -----
[/Rect [ 70 650 210 675 ]
/Border [ 16 16 1 ]
/Page /Next
/View [ -5 797 1.5]
/LNK pdfmark
showpage

%%Page: 3 3
[/CropBox [0 0 612 792] /PAGE pdfmark
(This is page 3.) 75 690 F3 sms
(Click here to go to page 1.) 75 660 F2 sms
%----- Link -----
[/Rect [ 70 650 210 675 ]
/Border [ 16 16 1 ]
/Page 1
/View [ /FitH 5]
/LNK pdfmark
%----- Bookmark entries -----
[/Count 1 /Page 1 /View [44 730 1] /Title (Annotations) /OUT pdfmark
[/Page 1 /View [44 730 2.5] /Title (Closer Look) /OUT pdfmark

[/Count 2 /Page 2 /View [44 730 1] /Title (Links) /OUT pdfmark
[/Page 2 /View [44 730 2.0] /Title (200% Magnification) /OUT pdfmark
[/Page 2 /View [44 730 4.0] /Title (400% Magnification) /OUT pdfmark

[/Count -3 /Page 1 /View [44 730 1] /Title (Table of Contents) /OUT
pdfmark
[/Page 1 /View [44 730 1] /Title (Page 1) /OUT pdfmark
[/Page 2 /View [44 730 1] /Title (Page 2) /OUT pdfmark
[/Page 3 /View [/Fit] /Title (Page 3) /OUT pdfmark

showpage
%%EOF

```

6 Changes

6.1 Seventh Draft: 12. January, 1993

- **pdfmark** moved to **systemdict** in version Macintosh Distiller 1.0a3 and later.

- Added destination names and parameters for the **View** key.

6.2 Eighth Draft: 06. March, 1993

- Changed title from “Distiller Marker Language” to “pdfmark Reference Manual.”
- Added information on the placement of a page-cropping marker if thumbnail generation is active in the Distiller.
- Added destination name objects **Next** and **Prev** for the **Page** key.
- The above changes are implemented in the Acrobat Distillers for Macintosh (versions 1.0a20 and later) and Windows (versions 1.0a9 and later).

6.3 Ninth Draft: 22. April, 1993

- Added **XYZ** destination key. This key may be used to create link and outline destinations that have the same behaviour as the Acrobat viewers’ Go To Page features, i.e. go to a specific page but retain the horizontal and/or vertical offset and zoom of the current page.

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