

# The bookmark package

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## Abstract

This package implements a new bookmark (outline) organization for package `hyperref`. Bookmark properties such as style and color can now be set. Other action types are available (URL, GoToR, Named). The bookmarks are generated in the first compile run. Package `hyperref` uses two runs.

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# 1 Documentation

## 1.1 Introduction

This package `bookmark` tries to provide a more modern management for bookmarks:

- The bookmarks are already generated in the first  $\text{\TeX}$  compile run.
- The font style and color of the bookmarks can be changed.
- More actions than simple `GoTo` actions are possible.

In the same way as `hyperref` the bookmarks are generated in the order of the bookmark generating macros (`\bookmark`). A level number is used to define the tree structure of the bookmarks. The restrictions are less strict:

- The level values may jump and omit values. A `\subsubsection` may follow a `\chapter`. This was an error in `hyperref`, that prints a warning and tries to fix this.
- Several bookmarks may point to the same destination. In `hyperref` this would mess up the bookmark tree completely, because the algorithm assumes that the destination names are keys (unique).

## 1.2 Options

Options can be given at three places:

1. `\usepackage[options]{bookmark}`  
This is the only place for driver options.
2. `\bookmarksetup{options}`  
This command is just for setting options.
3. `\pdfbookmark[options]{title}`  
This command sets the bookmark. The option settings remain limited to this bookmark.

### 1.2.1 Driver options

Supported drivers are `pdftex`, `dvips`, and `dvipdfm` (`xetex`). The  $\text{\TeX}$  engines `pdf $\text{\TeX}$`  and `Xe $\text{\TeX}$`  are automatically detected. The default for the DVI drivers is `dvips`. This can be changed in the configuration file `bookmark.cfg` by `\BookmarkDefaultDriver`, e.g.:

```
\def\BookmarkDefaultDriver{dvipdfm}
```

### 1.2.2 Style options

**Font options.**

**bold:** The bookmark is shown with a bold font if the PDF viewer supports this (since PDF 1.4).

**italic:** An italic font is used (since PDF 1.4).

Both **bold** and **italic** can be used together. Using value `false` disables the font option.

**Color options.** Colored bookmarks are a feature of PDF 1.4, they are not supported by all PDF viewers.

**rgbcolor:** This option expects an RGB triplet, three space separated values in the range 0 until 1. Example for blue: `rgbcolor=0 0 1`

**color:** Here the color can be given as color specification of packages `color`/`xcolor`. Package `xcolor` must be loaded first, before this option can be used.

Both options are exclusive. Used together the second option overwrites the previous color option settings. The use of color is disabled by using the empty value, e.g.: `color={}`

### 1.2.3 Action options

**dest:** Destination name.

**page:** Page number, first page is 1.

**view:** View specification, examples:

`view={FitB}`, `view={FitH 842}`, `view={XYZ 0 100 null}` Some view specifications expect numbers as parameters (unit bp). They can be given either as plain numbers or as length expressions inside `\calc`. Expressions of package `calc` are supported if the package is loaded. Otherwise  $\varepsilon$ -TeX's `\dimexpr` is used. Example:

`view={FitH \calc{\paperheight-\topmargin-1in}}`  
`view={XYZ 0 \calc{\paperheight} null}`

**named:** Named action name:

`FirstPage`, `LastPage`, `NextPage`, `PrevPage`

**gotor:** Name of the external PDF file.

**uri:** URI specification.

**rawaction:** Raw action specification. Because these specification depends on the driver this option should not be used.

The appropriate action for the bookmark is selected by analyzing the specified options. The actions are distinguished by different sets of options:

Action	Options
GoTo:	<code>dest</code>
GoTo:	<code>page + view</code>
GoToR:	<code>gotor + dest</code>
GoToR:	<code>gotor + page + view</code>
Named:	<code>named</code>
URI:	<code>uri</code>

## 1.3 Level options

The order of the bookmark entries are defined by the appearance order of `\bookmark` commands. The tree structure is constructed by the property `level` of the bookmark nodes. The values of `level` are integers. If the level of a bookmark entry has a higher value than the previous node, then the entry becomes a child of the previous node. The absolute value of the difference does not matter.

Package `bookmark` remembers the level of the previous bookmark entry in a global property 'current level'.

The behaviour of the level system can be configured by following options:

**level:** Sets the level, see the description above. If option `level` is given without value, then the default behaviour is restored, that the 'current level' is used as level value.

**rellevel:** Sets the level relative to the previous level. A positive value means that the bookmark entry become a child of the previous one.

**keeplevel:** Use the level, set by `level` or `rellevel`, but do not change the global property ‘current level’. The option can be disabled by setting to `false`.

**startatroot:** At this time the bookmark tree starts at the top level again. The next bookmark entry is not sorted as child to a previous entry. Example szenario: A document uses `part`. However there are last chapters that should not be put below the last `part`:

```
\documentclass{book}
[...]
\begin{document}
  \part{First part}
    \chapter{First chapter in first part}
    [...]
  \part{Second part}
    \chapter{First chapter in second part}
    [...]
  \bookmarksetup{startatroot}
  \chapter{Index}% does not belong to second part
\end{document}
```

## 1.4 Compatibility with hyperref

Package `bookmark` automatically disables `hyperref`’s bookmarks. However the package uses some of the code of `hyperref`. For example, the package redefines the hook `\Hy@writebookmark` that `hyperref` inserts in `\addcontentsline` and other commands. Therefore `hyperref`’s bookmarks should not be disabled.

Package `bookmark` uses `hyperref`’s `\pdfstringdef` and does not provide a replacement.

Some options of `hyperref` are also implemented in package `bookmark`:

<code>hyperref</code>	<code>bookmark</code>
<code>bookmarksdepth</code>	<code>depth</code>
<code>bookmarksopen</code>	<code>open</code>
<code>bookmarksopenlevel</code>	<code>openlevel</code>

The following commands are also available:

```
\pdfbookmark
\currentpdfbookmark
\subpdfbookmark
\belowpdfbookmark
```

## 1.5 Limitations/ToDos

- Support for missing drivers (`VTEX`, ...).
- Support for missing actions (`Launch`, ...).
- Replacements for `\pdfescapehex`, `\pdfescapestring`, ... for other `TEX` engines than `pdfTEX`.
- `hyperref`’s `bookmarkstype`.
- Adding bookmarks at the end of the document is difficult for `dvipdfm`, because the `\special` must go into a page. The problem can be solved by two runs using `zref-abspage` for detecting the last page and package `everyshi` for adding the `\specials` at the end of the last page.

## 2 Example

```
1 (*example)
2 \documentclass{article}
3 \usepackage{xcolor}[2007/01/21]
4 \usepackage{hyperref}
5 \usepackage[
6   open,
7   openlevel=2
8 ]{bookmark}
9
10 \bookmarksetup{color=blue}
11
12 \begin{document}
13 \section{First section}
14 \subsection{Subsection A}
15 \begin{figure}
16   \hypertarget{fig}{}%
17   \bookmark[
18     rellevel=1,
19     keeplevel,
20     dest=fig
21   ]{A figure}
22   A figure.
23 \end{figure}
24 \subsection{Subsection B}
25 \subsubsection{Subsubsection C}
26 \newpage
27 \bookmarksetup{
28   bold,
29   rgbcolor=1 0 0
30 }
31 \section{Very important section}
32 \bookmarksetup{
33   italic,
34   bold=false,
35   color=blue
36 }
37 \subsection{Italic section}
38 \bookmarksetup{
39   italic=false
40 }
41 \part{Misc}
42 \section{Diverse}
43 \subsubsection{Subsubsection, omitting subsection}
44 \bookmarksetup{
45   startatroot
46 }
47 \section{Last section outside part}
48 \subsection{Subsection}
49 \bookmarksetup{
50   color={}
51 }
52 \begingroup
53   \bookmarksetup{level=0, color=green!80!black}
54   \bookmark[named=FirstPage]{First page}
55   \bookmark[named=LastPage]{Last page}
56   \bookmark[named=PrevPage]{Previous page}
57   \bookmark[named=NextPage]{Next page}
58 \endgroup
59 \bookmark[
60   page=2,
```

```

61 view=FitH 800
62 ]{Page 2, FitH 800}
63 \bookmark[
64   page=2,
65   view=FitBH \calc{\paperheight-\topmargin-1in-\headheight-\headsep}
66 ]{Page 2, FitBH top of text body}
67 \bookmark[
68   uri={http://www.dante.de/},
69   color=magenta
70 ]{Dante homepage}
71 \bookmark[
72   goto={t.pdf},
73   page=1,
74   view={XYZ 0 1000 null},
75   color=cyan!75!black
76 ]{File t.pdf}
77 \bookmark[named=FirstPage]{First page}
78 \bookmark[rellevel=1, named=LastPage]{Last page (rellevel=1)}
79 \bookmark[named=PrevPage]{Previous page}
80 \bookmark[level=0, named=FirstPage]{First page (level=0)}
81 \bookmark[
82   rellevel=1,
83   keeplevel,
84   named=LastPage
85 ]{Last page (rellevel=1, keeplevel)}
86 \bookmark[named=PrevPage]{Previous page}
87 \end{document}
88 </example>

```

## 3 Implementation

### 3.1 Package

```

89 <*package>
90 \NeedsTeXFormat{LaTeX2e}
91 \ProvidesPackage{bookmark}%
92   [2007/02/20 v0.2 PDF bookmarks (H0)]

```

#### 3.1.1 Requirements

```

93 \begingroup\expandafter\expandafter\expandafter\endgroup
94 \expandafter\ifx\csname pdfescapehex\endcsname\relax
95   \PackageWarningNoLine{bookmark}{%
96     Some features of pdfTeX 1.30 are missing that\MessageBreak
97     protect some arguments. Replacements for these\MessageBreak
98     features are not implemented. Thus the pdf file\MessageBreak
99     can become invalid or the .aux file breaks%
100   }%
101   \let\BKM@escapename\@firstofone
102   \let\BKM@escapestring\@firstofone
103   \let\BKM@escapehex\@firstofone
104   \let\BKM@unescapehex\@firstofone
105 \else
106   \let\BKM@escapename\pdfescapename
107   \let\BKM@escapestring\pdfescapestring
108   \let\BKM@escapehex\pdfescapehex
109   \let\BKM@unescapehex\pdfunescapehex
110 \fi

```

#### Packages.

```

111 \RequirePackage{ifpdf}
112 \RequirePackage{ifxetex}
113 \RequirePackage{hyperref}
114 \RequirePackage{auxhook}

```

```

115 \RequirePackage{flags}
116 \RequirePackage{kvoptions}

```

### 3.1.2 Package options

```

117 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
118 \newcommand*{\bookmarksetup}{\setkeys{BKM}}
119 \DeclareBoolOption{open}
120 \DeclareStringOption[\maxdimen]{openlevel}
121 \DeclareStringOption[\c@tocdepth]{depth}
122 \DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
123 \DeclareBoolOption{keeplevel}
124 \DeclareBoolOption{startatroot}
125 \define@key{BKM}{rellevel}{%
126   \edef\BKM@level{\number\numexpr#1+\BKM@currentlevel\relax}%
127 }
128 \def\BKM@currentlevel{0}

```

#### Style options.

```

129 \resetflags{BKM@style}
130 \define@key{BKM}{italic}[true]{%
131   \expandafter\ifx\csname if#1\endcsname\iftrue
132     \setflag{BKM@style}{1}%
133   \else
134     \clearflag{BKM@style}{1}%
135   \fi
136 }
137 \define@key{BKM}{bold}[true]{%
138   \expandafter\ifx\csname if#1\endcsname\iftrue
139     \setflag{BKM@style}{2}%
140   \else
141     \clearflag{BKM@style}{2}%
142   \fi
143 }

```

#### Options for color.

```

144 \define@key{BKM}{rgbcolor}{%
145   \def\BKM@color{#1}%
146 }
147 \define@key{BKM}{color}{%
148   \ifx\#1\%
149     \let\BKM@color\@empty
150   \else
151     \@ifundefined{XC@bordercolor}{%
152       \PackageWarning{bookmark}{%
153         Load package 'xcolor' (version >= 2.11) first.\MessageBreak
154         Ignoring color specification%
155       }%
156     }{%
157       \begingroup
158         \csname @safe@activetrue\endcsname
159         \XC@bordercolor{#1}%
160       \expandafter\endgroup
161       \expandafter\def\expandafter\BKM@color\expandafter{\@bordercolor}%
162     }%
163   \fi
164 }
165 \let\BKM@color\@empty

```

### 3.1.3 Action options

```

166 \DeclareStringOption{dest}

```

```

167 \DeclareStringOption{named}
168 \DeclareStringOption{uri}
169 \DeclareStringOption{gotor}
170 \DeclareStringOption{rawaction}

171 \define@key{BKM}{page}{%
172   \def\BKM@page{#1}%
173   \ifx\BKM@page\@empty
174   \else
175     \edef\BKM@page{\number\BKM@page}%
176     \ifnum\BKM@page>\z@
177     \else
178       \PackageError{bookmark}{Page must be positive}\@ehc
179     \def\BKM@page{1}%
180   \fi
181 \fi
182 }
183 \let\BKM@page\@empty

184 \define@key{BKM}{view}{%
185   \BKM@CheckView{#1}%
186 }
187 \let\BKM@view\@empty
188 \def\BKM@CheckView#1{%
189   \BKM@CheckViewType#1 \@nil
190 }
191 \def\BKM@CheckViewType#1 #2\@nil{%
192   \def\BKM@type{#1}%
193   \@onelevel@sanitize\BKM@type
194   \BKM@TestViewType{Fit}{}%
195   \BKM@TestViewType{FitB}{}%
196   \BKM@TestViewType{FitH}{%
197     \BKM@CheckParam#2 \@nil{top}%
198   }%
199   \BKM@TestViewType{FitBH}{%
200     \BKM@CheckParam#2 \@nil{top}%
201   }%
202   \BKM@TestViewType{FitV}{%
203     \BKM@CheckParam#2 \@nil{bottom}%
204   }%
205   \BKM@TestViewType{FitBV}{%
206     \BKM@CheckParam#2 \@nil{bottom}%
207   }%
208   \BKM@TestViewType{FitR}{%
209     \BKM@CheckRect{#2}{ }%
210   }%
211   \BKM@TestViewType{XYZ}{%
212     \BKM@CheckXYZ{#2}{ }%
213   }%
214   \@car{%
215     \PackageError{pdfbookmark}{%
216       Unknown view type '\BKM@type',\MessageBreak
217       using 'FitH' instead%
218     }\@ehc
219     \def\BKM@view{FitH}%
220   }%
221   \@nil
222 }
223 \def\BKM@TestViewType#1{%
224   \def\BKM@temp{#1}%
225   \@onelevel@sanitize\BKM@temp
226   \ifx\BKM@type\BKM@temp
227     \let\BKM@view\BKM@temp
228     \expandafter\@car

```



```

229 \else
230   \expandafter\@gobble
231 \fi
232 }
233 \def\BKM@CheckParam#1 #2\@nil#3{%
234   \def\BKM@param{#1}%
235   \ifx\BKM@param\@empty
236     \PackageWarning{bookmark}{%
237       Missing parameter (#3) for '\BKM@type',\MessageBreak
238       using 0%
239     }%
240   \def\BKM@param{0}%
241 \else
242   \BKM@CalcParam
243 \fi
244 \edef\BKM@view{\BKM@view\space\BKM@param}%
245 }
246 \def\BKM@CheckRect#1#2{%
247   \BKM@@CheckRect#1#2#2#2\@nil
248 }
249 \def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
250   \def\BKM@temp{0}%
251   \def\BKM@param{#1}%
252   \ifx\BKM@param\@empty
253     \def\BKM@param{0}%
254     \def\BKM@temp{1}%
255   \else
256     \BKM@CalcParam
257   \fi
258   \edef\BKM@view{\BKM@view\space\BKM@param}%
259   \def\BKM@param{#2}%
260   \ifx\BKM@param\@empty
261     \def\BKM@param{0}%
262     \def\BKM@temp{1}%
263   \else
264     \BKM@CalcParam
265   \fi
266   \edef\BKM@view{\BKM@view\space\BKM@param}%
267   \def\BKM@param{#3}%
268   \ifx\BKM@param\@empty
269     \def\BKM@param{0}%
270     \def\BKM@temp{1}%
271   \else
272     \BKM@CalcParam
273   \fi
274   \edef\BKM@view{\BKM@view\space\BKM@param}%
275   \def\BKM@param{#4}%
276   \ifx\BKM@param\@empty
277     \def\BKM@param{0}%
278     \def\BKM@temp{1}%
279   \else
280     \BKM@CalcParam
281   \fi
282   \edef\BKM@view{\BKM@view\space\BKM@param}%
283   \ifnum\BKM@temp>\z@
284     \PackageWarning{bookmark}{Missing parameters for '\BKM@type'}%
285   \fi
286 }
287 \def\BKM@CheckXYZ#1#2{%
288   \BKM@@CheckXYZ#1#2#2#2\@nil
289 }
290 \def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%

```

```

291 \def\BKM@param{#1}%
292 \let\BKM@temp\BKM@param
293 \@onelevel@sanitize\BKM@temp
294 \ifx\BKM@param\@empty
295   \let\BKM@param\BKM@null
296 \else
297   \ifx\BKM@temp\BKM@null
298   \else
299     \BKM@CalcParam
300   \fi
301 \fi
302 \edef\BKM@view{\BKM@view\space\BKM@param}%
303 \def\BKM@param{#2}%
304 \let\BKM@temp\BKM@param
305 \@onelevel@sanitize\BKM@temp
306 \ifx\BKM@param\@empty
307   \let\BKM@param\BKM@null
308   \ifx\BKM@temp\BKM@null
309   \else
310     \BKM@CalcParam
311   \fi
312 \fi
313 \edef\BKM@view{\BKM@view\space\BKM@param}%
314 \def\BKM@param{#3}%
315 \ifx\BKM@param\@empty
316   \let\BKM@param\BKM@null
317 \fi
318 \edef\BKM@view{\BKM@view\space\BKM@param}%
319 }
320 \def\BKM@null{null}
321 \@onelevel@sanitize\BKM@null
322 \def\BKM@CalcParam{%
323   \begingroup
324   \let\calc\@firstofone
325   \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
326 }
327 \def\BKM@@CalcParam#1#2#3\@nil{%
328   \ifx\calc#1%
329     \@ifundefined{calc@assign@dimen}{%
330       \setlength{\dimen@}{\dimexpr#2\relax}%
331     }{%
332       \setlength{\dimen@}{#2}%
333     }%
334     \dimen@.99626\dimen@
335     \edef\BKM@param{\strip@pt\dimen@}%
336     \expandafter\endgroup
337     \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
338   \else
339     \endgroup
340   \fi
341 }

```

### 3.1.4 Driver setup and loading

#### Driver detection.

```

342 \define@key{BKM}{pdftex}[]{}%
343 \def\BKM@driver{pdftex}%
344 }
345 \define@key{BKM}{dvips}[]{}%
346 \def\BKM@driver{dvips}%
347 }
348 \define@key{BKM}{dvipdfm}[]{}%
349 \def\BKM@driver{dvipdfm}%

```

```

350 }
351 \define@key{BKM}{dvipdfmx}[]{}
352 \def\BKM@driver{dvipdfm}%
353 }
354 \define@key{BKM}{xetex}[]{}
355 \def\BKM@driver{dvipdfm}%
356 }
357 \InputIfFileExists{bookmark.cfg}{}{}
358 \providecommand*\BookmarkDriverDefault{dvips}
359 \ifpdf
360 \def\BKM@driver{pdftex}%
361 \else
362 \ifxetex
363 \def\BKM@driver{dvipdfm}%
364 \else
365 \let\BKM@driver\BookmarkDriverDefault
366 \fi
367 \fi

```

### Process options.

```

368 \ProcessKeyvalOptions*
369 \DisableKeyvalOption{BKM}{pdftex}
370 \DisableKeyvalOption{BKM}{dvips}
371 \DisableKeyvalOption{BKM}{dvipdfm}
372 \DisableKeyvalOption{BKM}{dvipdfmx}
373 \DisableKeyvalOption{BKM}{xetex}

```

### Driver validation and loading.

```

374 \def\BKM@temp{pdftex}%
375 \ifpdf
376 \ifx\BKM@temp\BKM@driver
377 \else
378 \PackageWarningNoLine{bookmark}{%
379 Wrong driver '\BKM@driver', using 'pdftex' instead%
380 }%
381 \let\BKM@driver\BKM@temp
382 \fi
383 \else
384 \ifx\BKM@temp\BKM@driver
385 \PackageError{bookmark}{%
386 Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
387 Package loading is aborted%
388 }@ehc
389 \expandafter\expandafter\expandafter\endinput
390 \fi
391 \def\BKM@temp{dvipdfm}%
392 \ifxetex
393 \ifx\BKM@temp\BKM@driver
394 \else
395 \PackageWarningNoLine{bookmark}{%
396 Wrong driver '\BKM@driver',\MessageBreak
397 using 'dvipdfm' for XeTeX instead%
398 }%
399 \let\BKM@driver\BKM@temp
400 \fi
401 \fi
402 \fi
403 \InputIfFileExists{bkm-\BKM@driver.def}{}{}
404 \PackageError{bookmark}{%
405 Unsupported driver '\BKM@driver'.\MessageBreak
406 Package loading is aborted%

```

```

407 } \@ehc
408 \endinput
409 }

```

### 3.1.5 Compatibility for hyperref

```

410 \renewcommand*{\pdfbookmark}[3][0]{%
411   \bookmark[level=#1,dest={#3.#1}]{#2}%
412   \hyper@anchorstart{#3.#1}\hyper@anchorend
413 }
414 \renewcommand*{\currentpdfbookmark}{%
415   \pdfbookmark[BKM@currentlevel]%
416 }
417 \renewcommand*{\subpdfbookmark}{%
418   \expandafter\pdfbookmark\expandafter[%
419     \the\numexpr\BKM@currentlevel+1\relax
420   ]%
421 }
422 \renewcommand*{\belowpdfbookmark}[2]{%
423   \xdef\BKM@gtemp{\number\BKM@currentlevel}%
424   \subpdfbookmark{#1}{#2}%
425   \global\let\BKM@currentlevel\BKM@gtemp
426 }

      section number, text, label, level, file
427 \renewcommand*{\Hy@writebookmark}[5]{%
428   \ifnum#4>\Hy@bookmarksdepth\relax
429   \else
430     \begingroup
431       \ifHy@bookmarksnumbered
432         \let\numberline\Hy@numberline
433         \let\partnumberline\Hy@numberline
434         \let\chapternumberline\Hy@numberline
435       \else
436         \let\numberline\@gobble
437         \let\partnumberline\@gobble
438         \let\chapternumberline\@gobble
439       \fi
440       \bookmark[level=#4,dest={#3}]{#2}%
441     \endgroup
442   \fi
443 }
444 \let\ReadBookmarks\relax
445 </package>

```

## 3.2 Driver for dvipdfm

```

446 <dvipdfm>
447 \NeedsTeXFormat{LaTeX2e}
448 \ProvidesFile{bkm-dvipdfm.def}%
449   [2007/02/20 v0.2 bookmark driver for dvipdfm (H0)]
450 \newcount\BKM@id
451 \BKM@id=\z@
452 \def\BKM@0{000}
453 \newif\ifBKM@sw
454 \newcommand*{\bookmark}[2][ ]{%
455   \if@filesw
456     \begingroup
457       \bookmarksetup{#1}%
458       \ifBKM@keeplevel
459       \else
460         \xdef\BKM@currentlevel{\BKM@level}%

```

```

461 \fi
462 \edef\BKM@prev{\the\BKM@id}%
463 \global\advance\BKM@id\@ne
464 \BKM@swtrue
465 \@whiles\ifBKM@sw\fi{%
466   \def\BKM@abslevel{1}%
467   \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
468     \global\BKM@startatrootfalse
469     \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
470       O{\BKM@level}\BKM@abslevel
471     }%
472     \BKM@swfalse
473   \else
474     \expandafter\expandafter\expandafter\BKM@getx
475     \csname BKM@\BKM@prev\endcsname
476     \ifnum\BKM@level>\BKM@x@level\relax
477       \edef\BKM@abslevel{\the\numexpr\BKM@x@abslevel+1\relax}%
478       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
479         {\BKM@prev}{\BKM@level}\BKM@abslevel
480       }%
481       \BKM@swfalse
482     \else
483       \let\BKM@prev\BKM@x@parent
484     \fi
485   \fi
486 }%
487 \pdfstringdef\BKM@title{#2}%
488 \edef\BKM@FLAGS{\printflags{BKM@style}}%
489 \let\BKM@action\@empty
490 \ifx\BKM@goto\@empty
491   \ifx\BKM@dest\@empty
492     \ifx\BKM@named\@empty
493       \ifx\BKM@rawaction\@empty
494         \ifx\BKM@uri\@empty
495           \ifx\BKM@page\@empty
496             \PackageError{bookmark}{Missing action}\@ehc
497             \edef\BKM@action{/Dest[@page1/Fit]]}%
498           \else
499             \ifx\BKM@view\@empty
500               \def\BKM@view{Fit}%
501             \fi
502             \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]]}%
503           \fi
504         \else
505           \edef\BKM@action{%
506             /A<<%
507             /S/URI%
508             /URI(\BKM@escapestring{\BKM@uri})%
509             >>%
510           }%
511         \fi
512       \else
513         \edef\BKM@action{/A<<\BKM@rawaction>>}%
514       \fi
515     \else
516       \edef\BKM@action{%
517         /A<</S/Named/N/\BKM@escapename{\BKM@named}>>%
518       }%
519     \fi
520   \else
521     \edef\BKM@action{%
522       /A<<%

```

```

523         /S/GoTo%
524         /D(\BKM@escapestring{\BKM@dest})%
525     >>%
526     }%
527     \fi
528     \else
529         \ifx\BKM@dest\@empty
530             \ifx\BKM@page\@empty
531                 \def\BKM@page{0}%
532             \else
533                 \edef\BKM@page{\the\numexpr\BKM@page-1\relax}%
534             \fi
535             \ifx\BKM@view\@empty
536                 \def\BKM@view{Fit}%
537             \fi
538             \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
539         \else
540             \edef\BKM@action{/D(\BKM@escapestring{\BKM@dest})}%
541         \fi
542         \edef\BKM@action{%
543             /A<<%
544             /S/GoToR%
545             /F(\BKM@escapestring{\BKM@goto})%
546             \BKM@action
547         >>%
548     }%
549     \fi
550     \special{pdf:
551         out \BKM@abslevel
552         <<%
553             /Title(\BKM@title)%
554             \ifx\BKM@color\@empty
555                 \else
556                     /C[\BKM@color]%
557                 \fi
558             \ifnum\BKM@FLAGS>\z@
559                 /F \BKM@FLAGS
560             \fi
561             \BKM@action
562         >>%
563     }%
564     \endgroup
565     \fi
566 }

567 \def\BKM@getx#1#2#3{%
568     \def\BKM@x@parent{#1}%
569     \def\BKM@x@level{#2}%
570     \def\BKM@x@abslevel{#3}%
571 }

572 </dvipdfm>

```

### 3.3 Driver for pdfTeX

```

573 <*pdfTeX>
574 \NeedsTeXFormat{LaTeX2e}
575 \ProvidesFile{bkm-pdfTeX.def}%
576     [2007/02/20 v0.2 bookmark driver for pdfTeX (H0)]

577 \def\BKM@DO@entry#1#2{%
578     \begingroup
579         \setkeys{BKM@DO}{#1}%
580         \edef\BKM@DO@title{\BKM@unescapehex{#2}}%
581         \expandafter\expandafter\expandafter\BKM@getx

```

```

582      \csname BKM@BKM@DO@id\endcsname\@empty\@empty
583      \let\BKM@attr\@empty
584      \ifx\BKM@DO@flags\@empty
585      \else
586      \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
587      \fi
588      \ifx\BKM@DO@color\@empty
589      \else
590      \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
591      \fi
592      \ifx\BKM@attr\@empty
593      \else
594      \edef\BKM@attr{attr{\BKM@attr}}%
595      \fi
596      \let\BKM@action\@empty
597      \ifx\BKM@DO@goto\@empty
598      \ifx\BKM@DO@dest\@empty
599      \ifx\BKM@DO@named\@empty
600      \ifx\BKM@DO@rawaction\@empty
601      \ifx\BKM@DO@uri\@empty
602      \ifx\BKM@DO@page\@empty
603      \PackageError{bookmark}{Missing action}\@ehc
604      \edef\BKM@action{goto page1{/Fit}}%
605      \else
606      \ifx\BKM@DO@view\@empty
607      \def\BKM@DO@view{Fit}%
608      \fi
609      \edef\BKM@action{goto page\BKM@DO@page{/BKM@DO@view}}%
610      \fi
611      \else
612      \edef\BKM@action{user{<</S/URI/URI(
613      \BKM@escapestring{\BKM@unescapehex{\BKM@DO@uri}}>>}}%
614      \fi
615      \else
616      \edef\BKM@action{%
617      user{%
618      <<%
619      \BKM@unescapehex{\BKM@DO@rawaction}%
620      >>%
621      }%
622      }%
623      \fi
624      \else
625      \edef\BKM@action{%
626      user{<</S/Named/N/\BKM@escapename{\BKM@DO@named}>>}}%
627      }%
628      \fi
629      \else
630      \edef\BKM@action{goto name{\BKM@DO@dest}}%
631      \fi
632      \else
633      \ifx\BKM@DO@dest\@empty
634      \ifx\BKM@DO@page\@empty
635      \def\BKM@DO@page{0}%
636      \else
637      \edef\BKM@DO@page{\the\numexpr\BKM@DO@page-1\relax}%
638      \fi
639      \ifx\BKM@DO@view\@empty
640      \def\BKM@DO@view{Fit}%
641      \fi
642      \edef\BKM@action{/D[\BKM@DO@page/\BKM@DO@view]}%
643      \else

```

```

644     \edef\BKM@action{/D(\BKM@escapestring{\BKM@DO@dest})}%
645     \fi
646     \edef\BKM@action{%
647         user{%
648             <<%
649             /S/GoToR%
650             /F(\BKM@escapestring{\BKM@unescapehex{\BKM@DO@goto}})%
651             \BKM@action
652             >>%
653         }%
654     }%
655     \fi
656     \pdfoutline\BKM@attr\BKM@action
657         count\ifBKM@DO@open\else-\fi\BKM@x@childs
658         {\BKM@DO@title}%
659 \endgroup
660 }
661 </pdfTeX>

```

### 3.4 Driver for dvips

```

662 (*dvips)
663 \NeedsTeXFormat{LaTeX2e}
664 \ProvidesFile{bkm-dvips.def}%
665 [2007/02/20 v0.2 bookmark driver for dvips (HO)]

666 \def\BKM@filename{\jobname.out.ps}
667 \special{header=\BKM@filename}

668 \AtEndDocument{\BKM@dvips@out}

669 \def\BKM@dvips@out{%
670     \newwrite\BKM@file
671     \immediate\openout\BKM@file=\BKM@filename\relax
672     \BKM@write{\@percentchar!}%
673     \BKM@write{/pdfmark where{pop}}%
674     \BKM@write{%
675         {%
676             /globaldict where{pop globaldict}{userdict}ifelse%
677             /pdfmark/cleartomark load put%
678         }%
679     }%
680     \BKM@write{ifelse}
681 }
682 \def\BKM@write#{%
683     \immediate\write\BKM@file
684 }

```

The specification for pdfmark says that /Color is the name of the key for color, however ghostscript only passes the key into the PDF file, thus the key name must be /C.

```

685 \def\BKM@DO@entry#1#2{%
686     \begingroup
687     \setkeys{BKM@DO}{#1}%
688     \edef\BKM@DO@title{\BKM@unescapehex{#2}}%
689     \expandafter\expandafter\expandafter\BKM@getx
690         \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
691     \let\BKM@attr\@empty
692     \ifx\BKM@DO@flags\@empty
693     \else
694         \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
695     \fi
696     \ifx\BKM@DO@color\@empty
697     \else
698         \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%

```



```

699 \fi
700 \let\BKM@action\@empty
701 \ifx\BKM@D0@goto\@empty
702   \ifx\BKM@D0@dest\@empty
703     \ifx\BKM@D0@named\@empty
704       \ifx\BKM@D0@rawaction\@empty
705         \ifx\BKM@D0@uri\@empty
706           \ifx\BKM@D0@page\@empty
707             \PackageError{bookmark}{Missing action}\@ehc
708             \edef\BKM@action{%
709               /Action/GoTo%
710               /Page 1%
711               /View[/Fit]%
712             }%
713           \else
714             \ifx\BKM@D0@view\@empty
715               \def\BKM@D0@view{Fit}%
716             \fi
717             \edef\BKM@action{%
718               /Action/GoTo%
719               /Page \BKM@D0@page
720               /View[/\BKM@D0@view]%
721             }%
722           \fi
723         \else
724           \edef\BKM@action{%
725             /Action<<%
726             /Subtype/URI%
727             /URI(\BKM@escapestring{\BKM@unescapehex{\BKM@D0@uri}})%
728             >>%
729           }%
730         \fi
731       \else
732         \edef\BKM@action{%
733           /Action<<%
734           \BKM@unescapehex{\BKM@D0@rawaction}%
735           >>%
736         }%
737       \fi
738     \else
739       \edef\BKM@action{%
740         /Action<<%
741         /Subtype/Named%
742         /N/\BKM@escapename{\BKM@D0@named}%
743         >>%
744       }%
745     \fi
746   \else
747     \edef\BKM@action{%
748       /Action/GoTo%
749       /Dest(\BKM@escapestring{\BKM@D0@dest})cvn%
750     }%
751   \fi
752 \else
753   \ifx\BKM@D0@dest\@empty
754     \ifx\BKM@D0@page\@empty
755       \def\BKM@D0@page{1}%
756     \fi
757     \ifx\BKM@D0@view\@empty
758       \def\BKM@D0@view{Fit}%
759     \fi
760     \edef\BKM@action{%

```

```

761         /Page \BKM@DO@page
762         /View[/\BKM@DO@view]%
763     }%
764     \else
765         \edef\BKM@action{%
766             /Dest(\BKM@escapestring{\BKM@DO@dest})cvn%
767         }%
768         \fi
769         \edef\BKM@action{%
770             /Action/GoToR%
771             /F(\BKM@escapestring{\BKM@unescapehex{\BKM@DO@goto}})%
772             \BKM@action
773         }%
774         \fi
775         \BKM@write{[]}%
776         \BKM@write{/Title(\BKM@DO@title)}%
777         \ifnum\BKM@x@chlds>\z@
778             \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chlds}%
779         \fi
780         \ifx\BKM@attr\@empty
781             \else
782                 \BKM@write{\BKM@attr}%
783             \fi
784             \BKM@write{\BKM@action}%
785             \BKM@write{/OUT pdfmark}%
786     \endgroup
787 }
788 </dvips>

```

### 3.5 Common part for pdftex and dvips

789 (\*pdftex | dvips)

#### 3.5.1 Write auxiliary file

```

790 \RequirePackage{auxhook}
791 \AddLineBeginMainAux{%
792     \string\providecommand\string\BKM@entry[2]{}%
793 }
794 \newcount\BKM@id
795 \BKM@id=\z@
796 \def\BKM@O{000}
797 \newif\ifBKM@sw
798 \newcommand*{\bookmark}[2][1]{%
799     \if@filesw
800         \begingroup
801             \bookmarksetup{#1}%
802             \ifBKM@keeplevel
803                 \else
804                     \xdef\BKM@currentlevel{\BKM@level}%
805                 \fi
806                 \edef\BKM@prev{\the\BKM@id}%
807                 \global\advance\BKM@id\@ne
808                 \BKM@swtrue
809                 \@whiles\ifBKM@sw\fi{%
810                     \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
811                         \global\BKM@startatrootfalse
812                         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
813                             O{\BKM@level}O%
814                         }%
815                     \BKM@swfalse
816                 \else

```

```

817 \expandafter\expandafter\expandafter\BKM@getx
818 \csname BKM@\BKM@prev\endcsname
819 \ifnum\BKM@level>\BKM@x@level\relax
820 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
821 {\BKM@prev}\BKM@level}0%
822 }%
823 \ifnum\BKM@prev>\z@
824 \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
825 {\BKM@x@parent}\BKM@x@level}%
826 \the\numexpr\BKM@x@childs+1\relax
827 }%
828 }%
829 \fi
830 \BKM@swfalse
831 \else
832 \let\BKM@prev\BKM@x@parent
833 \fi
834 \fi
835 }%
836 \pdfstringdef\BKM@title{#2}%
837 \edef\BKM@FLAGS{\printflags\BKM@style}%
838 \immediate\write\@mainaux{%
839 \string\BKM@entry{%
840 id=\number\BKM@id
841 \ifBKM@open
842 \ifnum\BKM@level<\BKM@openlevel
843 ,open%
844 \fi
845 \fi
846 \ifx\BKM@dest\@empty
847 \else
848 ,dest={\BKM@dest}%
849 \fi
850 \ifx\BKM@named\@empty
851 \else
852 ,named={\BKM@named}%
853 \fi
854 \ifx\BKM@uri\@empty
855 \else
856 ,uri={\BKM@escapehex{\BKM@uri}}%
857 \fi
858 \ifx\BKM@gotor\@empty
859 \else
860 ,gotor={\BKM@escapehex{\BKM@gotor}}%
861 \fi
862 \ifx\BKM@page\@empty
863 \else
864 ,page=\BKM@page
865 \fi
866 \ifx\BKM@view\@empty
867 \else
868 ,view={\BKM@view}%
869 \fi
870 \ifx\BKM@rawaction\@empty
871 \else
872 ,rawaction={\BKM@escapehex{\BKM@rawaction}}%
873 \fi
874 \ifnum\BKM@FLAGS>\z@
875 ,flags=\BKM@FLAGS
876 \fi
877 \ifx\BKM@color\@empty
878 \else

```

```

879         ,color={\BKM@color}%
880     \fi
881     }{\BKM@escapehex{\BKM@title}}}%
882 }%
883 \endgroup
884 \fi
885 }

886 \def\BKM@getx#1#2#3{%
887   \def\BKM@x@parent{#1}%
888   \def\BKM@x@level{#2}%
889   \def\BKM@x@childs{#3}%
890 }

```

### 3.5.2 Read auxiliary data

```

891 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
892 \DeclareStringOption[0]{id}
893 \DeclareBoolOption{open}
894 \DeclareStringOption{flags}
895 \DeclareStringOption{color}
896 \DeclareStringOption{dest}
897 \DeclareStringOption{named}
898 \DeclareStringOption{uri}
899 \DeclareStringOption{gotor}
900 \DeclareStringOption{page}
901 \DeclareStringOption{view}
902 \DeclareStringOption{rawaction}

903 \AtBeginDocument{%
904   \let\BKM@entry\BKM@DO@entry
905 }

906 </pdfTeX | dvips>

```

## 4 Installation

**CTAN.** This package is available on CTAN<sup>1</sup>:

[CTAN:macros/latex/contrib/oberdiek/bookmark.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/bookmark.pdf](#) Documentation.

**Unpacking.** The .dtx file is a self-extracting docstrip archive. The files are extracted by running the .dtx through plain-TEX:

```
tex bookmark.dtx
```

**TDS.** Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

<code>bookmark.sty</code>	→	<code>tex/latex/oberdiek/bookmark.sty</code>
<code>bkm-dvipdfm.def</code>	→	<code>tex/latex/oberdiek/bkm-dvipdfm.def</code>
<code>bkm-dvips.def</code>	→	<code>tex/latex/oberdiek/bkm-dvips.def</code>
<code>bkm-pdfTeX.def</code>	→	<code>tex/latex/oberdiek/bkm-pdfTeX.def</code>
<code>bookmark.pdf</code>	→	<code>doc/latex/oberdiek/bookmark.pdf</code>
<code>bookmark-example.tex</code>	→	<code>doc/latex/oberdiek/bookmark-example.tex</code>
<code>bookmark.dtx</code>	→	<code>source/latex/oberdiek/bookmark.dtx</code>

If you have a `docstrip.cfg` that configures and enables docstrip's TDS installing feature, then some files can already be in the right place, see the documentation of docstrip.

<sup>1</sup><http://ftp.ctan.org/tex-archive/>

**Refresh file databases.** If your T<sub>E</sub>X distribution (teT<sub>E</sub>X, mikT<sub>E</sub>X, ...) rely on file databases, you must refresh these. For example, teT<sub>E</sub>X users run `texhash` or `mktextlsr`.

## 4.1 Some details for the interested

**Attached source.** The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is `pdftk`, e.g. unpack the file into the current directory:

```
pdftk bookmark.pdf unpack_files output .
```

**Unpacking with L<sup>A</sup>T<sub>E</sub>X.** The `.dtx` chooses its action depending on the format:

**plain-T<sub>E</sub>X:** Run `docstrip` and extract the files.

**L<sup>A</sup>T<sub>E</sub>X:** Generate the documentation.

If you insist on using L<sup>A</sup>T<sub>E</sub>X for `docstrip` (really, `docstrip` does not need L<sup>A</sup>T<sub>E</sub>X), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{bookmark.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

**Generating the documentation.** You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfL<sup>A</sup>T<sub>E</sub>X:

```
pdflatex bookmark.dtx
makeindex -s gind.ist bookmark.idx
pdflatex bookmark.dtx
makeindex -s gind.ist bookmark.idx
pdflatex bookmark.dtx
```

## 5 History

[2007/02/19 v0.1]

- First experimental version.

[2007/02/20 v0.2]

- Option `startatroot` added.
- Dummies for `\pdf(un)escape...` commands added to get the package basically work for non-pdfT<sub>E</sub>X users.

## 6 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

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