

# 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 (URI, 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).

Note that this package is intended as experimentation platform for bookmark management. Feedback is welcome. Also the interfaces may change in future versions.

## 1.2 Options

Options can be given at three places:

1. `\usepackage[<options>]{bookmark}`  
This is the only place for driver options and option `atend`.
2. `\bookmarksetup{<options>}`  
This command is just for setting options.
3. `\bookmark[<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`, `dvipson`, `textures`, `dvipdfm` (xetex), and `vtex`. The  $\text{\TeX}$  engines `pdf $\text{\TeX}$` , `Xe $\text{\TeX}$` , and `V $\text{\TeX}$`  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}
```

**Open bookmarks with dvipdfmx.** Since 2007-04-25 the cvs version of `dvipdfmx` contains a patch that extends the `\special` for bookmarks in order to specify the open status of an outline entry. Option `dvipdfmx-outline-open` notifies the package that the dvi driver program understands this kind of `\special`. Alternatively `\SpecialDvipdfmxOutlineOpen` can be defined as number one in the configuration file or before the package is loaded, e.g.:

```
\chardef\SpecialDvipdfmxOutlineOpen=1\relax
```

### 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.

These options are ignored with a warning if  $\varepsilon\text{-}\text{\TeX}$  is not detected.

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

**color:** Here the color can be given as color specification of packages `color` or `xcolor`. An empty value means that the color property is not set. Without package `xcolor` the recognized values are restricted to

- Empty value, no color is set,  
example: `color={}`
- Explicit color specification of color model `rgb`,  
example for red: `color=[rgb]{1,0,0}`
- Explicit color specification of color model `gray`,  
example for dark gray: `color=[gray]{0.25}`

Note that this restriction also holds if package `color` is loaded. With `xcolor`, however, the full range of color specifications can be used.

### 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 specification parameters expect numbers as parameters with 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}`

Note that `\calc` cannot be used for the third parameter of `XYZ`. This parameter is the zoom value, not a length.

**named:** Named action name:

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

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

**uri:** URI specification.

**rawaction:** Raw action specification. Because this 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:	dest
GoTo:	page + view
GoToR:	gotor + dest
GoToR:	gotor + page + view
Named:	named
URI:	uri

### 1.2.4 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 scenario: 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}

```

### 1.3 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>
<code>bookmarksnumbered</code>	<code>numbered</code>

The following commands are also available:

```

\pdfbookmark
\currentpdfbookmark
\subpdfbookmark
\belowpdfbookmark

```

### 1.4 Adding bookmarks at the end

Package option `atend` enables the following macro:

`\BookmarkAtEnd {<stuff>}`

Macro `\BookmarkAtEnd` puts *<stuff>* at the end of the document. *<stuff>* means bookmark commands. Example:

```

\usepackage[atend]{bookmark}
\BookmarkAtEnd{%
  \bookmarksetup{startatroot}%
  \bookmark[named=LastPage, level=0]{Last page}%
}

```

#### Remarks.

- `\BookmarkAtEnd` hides the fact that the method for adding bookmarks at the end of the document depends on the driver.

Some drivers (`pdftex`, `dvips`, `dvipsone`, `textures`) use package `atveryend`'s for this purpose. `\AtEndDocument` is too early, the last page might not been shipped out. Because the `..aux` file is needed, these drivers use `\AfterLastShipout`.

The implementation of the other drivers (`dvipdfm`, `xetex`, `vtex`) depends on `\special` that does not have an effect after the last page. In this case `\AtEndDvi` of package `atenddvi` helps. It puts its argument on last page of the document. Two L<sup>A</sup>T<sub>E</sub>X runs are necessary at least, because the last page is detected by a reference.

- The time of expansion of the argument of `\BookmarkAtEnd` is not specified. This can happen immediately or at the end of the document.

## 1.5 Limitations/Todos

- Support for missing actions (`Launch`, ...).
- Better design for `hyperref`'s option `bookmarkstype`.

## 2 Example

```

1 \example
2 \documentclass{article}
3 \usepackage{xcolor}[2007/01/21]
4 \usepackage{hyperref}
5 \usepackage[
6   open,
7   openlevel=2,
8   atend
9 ]{bookmark}[2009/12/17]
10
11 \bookmarksetup{color=blue}
12
13 \BookmarkAtEnd{%
14   \bookmarksetup{startatroot}%
15   \bookmark[named=LastPage, level=0]{End/Last page}%
16   \bookmark[named=FirstPage, level=1]{First page}%
17 }
18
19 \begin{document}
20 \section{First section}
21 \subsection{Subsection A}
22 \begin{figure}
23   \hypertarget{fig}{}%
24   A figure.
25 \end{figure}
26 \bookmark[
27   rellevel=1,
28   keeplevel,
29   dest=fig
30 ]{A figure}
31 \subsection{Subsection B}
32 \subsubsection{Subsubsection C}
33 \subsection{Umlauts: "A" "O" "U" "a" "o" "u" "ss"}
34 \newpage
35 \bookmarksetup{
36   bold,
37   color=[rgb]{1,0,0}
38 }
39 \section{Very important section}
40 \bookmarksetup{
41   italic,
42   bold=false,
43   color=blue
44 }
```

```

45 \subsection{Italic section}
46 \bookmarksetup{
47   italic=false
48 }
49 \part{Misc}
50 \section{Diverse}
51 \subsubsection{Subsubsection, omitting subsection}
52 \bookmarksetup{
53   startatroot
54 }
55 \section{Last section outside part}
56 \subsection{Subsection}
57 \bookmarksetup{
58   color={}
59 }
60 \begingroup
61   \bookmarksetup{level=0, color=green!80!black}
62   \bookmark[named=FirstPage]{First page}
63   \bookmark[named=LastPage]{Last page}
64   \bookmark[named=PrevPage]{Previous page}
65   \bookmark[named=NextPage]{Next page}
66 \endgroup
67 \bookmark[
68   page=2,
69   view=FitH 800
70 ]{Page 2, FitH 800}
71 \bookmark[
72   page=2,
73   view=FitBH \calc{\paperheight-\topmargin-1in-\headheight-\headsep}
74 ]{Page 2, FitBH top of text body}
75 \bookmark[
76   uri={http://www.dante.de/},
77   color=magenta
78 ]{Dante homepage}
79 \bookmark[
80   gotor={t.pdf},
81   page=1,
82   view={XYZ 0 1000 null},
83   color=cyan!75!black
84 ]{File t.pdf}
85 \bookmark[named=FirstPage]{First page}
86 \bookmark[rellevel=1, named=LastPage]{Last page (rellevel=1)}
87 \bookmark[named=PrevPage]{Previous page}
88 \bookmark[level=0, named=FirstPage]{First page (level=0)}
89 \bookmark[
90   rellevel=1,
91   keeplevel,
92   named=LastPage
93 ]{Last page (rellevel=1, keeplevel)}
94 \bookmark[named=PrevPage]{Previous page}
95 \end{document}
96 \example

```

## 3 Implementation

### 3.1 Package

```

97 \*package
98 \NeedsTeXFormat{LaTeX2e}
99 \ProvidesPackage{bookmark}%
100 [2009/12/17 v1.8 PDF bookmarks (HO)]%

```

### 3.1.1 Requirements

$\epsilon$ -**T**<sub>E</sub>X.

```
101 \begingroup\expandafter\expandafter\expandafter\endgroup
102 \expandafter\ifx\csname numexpr\endcsname\relax
103   \def\BKM@CalcExpr#1#2#3#4{%
104     \begingroup
105       \count@=#2\relax
106       \advance\count@ by#3#4\relax
107       \edef\x{\endgroup
108         \def\noexpand#1{\the\count@}}%
109     }%
110   \x
111 }%
112 \else
113   \def\BKM@CalcExpr#1#2#3#4{%
114     \edef#1{%
115       \the\numexpr#2#3#4\relax
116     }%
117   }%
118 \fi
```

Escape features of pdf**T**<sub>E</sub>X.

```
119 \RequirePackage{pdfescape}[2007/03/20]
120 \def\BKM@EscapeName#1{%
121   \ifx#1\@empty
122   \else
123     \EdefEscapeName#1#1%
124   \fi
125 }%
126 \def\BKM@EscapeString#1{%
127   \ifx#1\@empty
128   \else
129     \EdefEscapeString#1#1%
130   \fi
131 }%
132 \def\BKM@EscapeHex#1{%
133   \ifx#1\@empty
134   \else
135     \EdefEscapeHex#1#1%
136   \fi
137 }%
138 \def\BKM@UnescapeHex#1{%
139   \EdefUnescapeHex#1#1%
140 }%
```

Packages.

```
141 \RequirePackage{ifpdf}[2009/04/10]
142 \RequirePackage{ifxetex}
143 \RequirePackage{ifvtex}[2008/11/04]
144 \RequirePackage{hyperref}
145 \RequirePackage{auxhook}[2007/04/06]
146 \RequirePackage{kvoptions}[2009/08/13]
147 \RequirePackage{hycolor}[2008/09/08]
148 \RequirePackage{bitset}
```

### 3.1.2 Package options

```
149 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
150 \DeclareLocalOptions{%
151   atend,%
152   bold,%
```



```

153 color,%
154 depth,%
155 dest,%
156 gotor,%
157 italic,%
158 keeplevel,%
159 level,%
160 named,%
161 numbered,%
162 open,%
163 openlevel,%
164 page,%
165 rawaction,%
166 rellevel,%
167 startatroot,%
168 uri,%
169 view,%
170 }
171 \newcommand*{\bookmarksetup}{\setkeys{BKM}}
172 \DeclareBoolOption[ifHy@bookmarksopen true\else false\fi]{open}
173 \DeclareStringOption[\maxdimen]{openlevel}
174 \edef\BKM@openlevel{\number\@bookmarksopenlevel}
175 %\DeclareStringOption[\c@tocdepth]{depth}
176 \begingroup\expandafter\expandafter\expandafter\endgroup
177 \expandafter\ifx\csname Hy@bookmarksdepth\endcsname\relax
178   \def\BKM@depth{\c@tocdepth}%
179 \else
180   \let\BKM@depth\Hy@bookmarksdepth
181 \fi
182 \define@key{BKM}{depth}[]{%
183   \edef\BKM@param{#1}%
184   \ifx\BKM@param\@empty
185     \def\BKM@depth{\c@tocdepth}%
186   \else
187     \ifundefined{toclevel@\BKM@param}{%
188       \onelevel@sanitize\BKM@param
189       \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
190       \ifcase 0\expandafter\ifx\BKM@temp-1\fi
191         \expandafter\ifnum\expandafter'\BKM@temp>47 %
192           \expandafter\ifnum\expandafter'\BKM@temp<58 %
193             1%
194           \fi
195         \fi
196       \relax
197       \PackageWarning{bookmark}{%
198         Unknown document division name (\BKM@param)%
199       }%
200     \else
201       \BKM@SetDepth\BKM@param
202     \fi
203   }{%
204     \BKM@SetDepth{\csname toclevel@\BKM@param\endcsname}%
205   }%
206 \fi
207 }
208 \def\BKM@SetDepth#1{%
209   \begingroup
210     \setbox\z@=\hbox{%
211       \count@=#1\relax
212     \expandafter
213   }%
214   \expandafter\endgroup

```

```

215 \expandafter\def\expandafter\BKM@depth\expandafter{\the\count@}%
216 }
217 \DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
218 \DeclareBoolOption{keeplevel}
219 \DeclareBoolOption{startatroot}
220 \define@key{BKM}{rellevel}{%
221   \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
222 }
223 \def\BKM@currentlevel{0}

```

Make bookmark's option numbered an alias for hyperref's bookmarksnumbered.

```

224 \DeclareBoolOption{%
225   \ifHy@bookmarksnumbered true\else false\fi
226 }{numbered}
227 \g@addto@macro\BKM@numberedtrue{%
228   \let\ifHy@bookmarksnumbered\iftrue
229 }
230 \g@addto@macro\BKM@numberedfalse{%
231   \let\ifHy@bookmarksnumbered\iffalse
232 }
233 \g@addto@macro\Hy@bookmarksnumberedtrue{%
234   \let\ifBKM@numbered\iftrue
235 }
236 \g@addto@macro\Hy@bookmarksnumberedfalse{%
237   \let\ifBKM@numbered\iffalse
238 }

```

### Redefinitions hyperref's options

```

239 \def\BKM@PatchHyperrefOption#1{%
240   \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
241 }
242 \def\BKM@@PatchHyperrefOption#1{%
243   \expandafter\BKM@@@PatchHyperrefOption#1{##1}\BKM@nil#1%
244 }
245 \def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
246   \def#2##1{%
247     #1%
248     \bookmarksetup{#3={##1}}%
249   }%
250 }
251 \BKM@PatchHyperrefOption{bookmarksopen}{open}
252 \BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
253 \BKM@PatchHyperrefOption{bookmarksdepth}{depth}

```

**Style options.** Caution: Package bitset is zero-based, the PDF specifications starts with one.

```

254 \bitsetReset{BKM@style}%
255 \define@key{BKM}{italic}[true]{%
256   \expandafter\ifx\csname if#1\endcsname\iftrue
257     \bitsetSet{BKM@style}{0}%
258   \else
259     \bitsetClear{BKM@style}{0}%
260   \fi
261 }%
262 \define@key{BKM}{bold}[true]{%
263   \expandafter\ifx\csname if#1\endcsname\iftrue
264     \bitsetSet{BKM@style}{1}%
265   \else
266     \bitsetClear{BKM@style}{1}%
267   \fi
268 }%
269 \def\BKM@PrintStyle{%
270   \bitsetGetDec{BKM@style}%

```

```
271 }%
```

### Options for color.

```
272 \define@key{BKM}{color}{%
273   \HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}%
274 }
275 \let\BKM@color\@empty
```

### 3.1.3 Action options

```
276 \DeclareStringOption{dest}
277 \DeclareStringOption{named}
278 \DeclareStringOption{uri}
279 \DeclareStringOption{goto}
280 \DeclareStringOption{rawaction}

281 \define@key{BKM}{page}{%
282   \def\BKM@page{#1}%
283   \ifx\BKM@page\@empty
284   \else
285     \edef\BKM@page{\number\BKM@page}%
286     \ifnum\BKM@page>\z@
287     \else
288       \PackageError{bookmark}{Page must be positive}\@ehc
289     \def\BKM@page{1}%
290   \fi
291 \fi
292 }
293 \let\BKM@page\@empty

294 \define@key{BKM}{view}{%
295   \BKM@CheckView{#1}%
296 }
297 \let\BKM@view\@empty
298 \def\BKM@CheckView#1{%
299   \BKM@CheckViewType#1 \@nil
300 }
301 \def\BKM@CheckViewType#1 #2\@nil{%
302   \def\BKM@type{#1}%
303   \@onelevel@sanitize\BKM@type
304   \BKM@TestViewType{Fit}{}%
305   \BKM@TestViewType{FitB}{}%
306   \BKM@TestViewType{FitH}{%
307     \BKM@CheckParam#2 \@nil{top}%
308   }%
309   \BKM@TestViewType{FitBH}{%
310     \BKM@CheckParam#2 \@nil{top}%
311   }%
312   \BKM@TestViewType{FitV}{%
313     \BKM@CheckParam#2 \@nil{bottom}%
314   }%
315   \BKM@TestViewType{FitBV}{%
316     \BKM@CheckParam#2 \@nil{bottom}%
317   }%
318   \BKM@TestViewType{FitR}{%
319     \BKM@CheckRect{#2}{ }%
320   }%
321   \BKM@TestViewType{XYZ}{%
322     \BKM@CheckXYZ{#2}{ }%
323   }%
324   \@car{%
325     \PackageError{pdfbookmark}{%
326       Unknown view type ‘\BKM@type’,\MessageBreak
```

```

327     using 'FitH' instead%
328   }\@ehc
329   \def\BKM@view{FitH}%
330 }%
331 \@nil
332 }
333 \def\BKM@TestViewType#1{%
334   \def\BKM@temp{#1}%
335   \@onelevel@sanitize\BKM@temp
336   \ifx\BKM@type\BKM@temp
337     \let\BKM@view\BKM@temp
338     \expandafter\@car
339   \else
340     \expandafter\@gobble
341   \fi
342 }
343 \def\BKM@CheckParam#1 #2\@nil#3{%
344   \def\BKM@param{#1}%
345   \ifx\BKM@param\@empty
346     \PackageWarning{bookmark}{%
347       Missing parameter (#3) for '\BKM@type',\MessageBreak
348       using 0%
349     }%
350     \def\BKM@param{0}%
351   \else
352     \BKM@CalcParam
353   \fi
354   \edef\BKM@view{\BKM@view\space\BKM@param}%
355 }
356 \def\BKM@CheckRect#1#2{%
357   \BKM@@CheckRect#1#2#2#2\@nil
358 }
359 \def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
360   \def\BKM@temp{0}%
361   \def\BKM@param{#1}%
362   \ifx\BKM@param\@empty
363     \def\BKM@param{0}%
364     \def\BKM@temp{1}%
365   \else
366     \BKM@CalcParam
367   \fi
368   \edef\BKM@view{\BKM@view\space\BKM@param}%
369   \def\BKM@param{#2}%
370   \ifx\BKM@param\@empty
371     \def\BKM@param{0}%
372     \def\BKM@temp{1}%
373   \else
374     \BKM@CalcParam
375   \fi
376   \edef\BKM@view{\BKM@view\space\BKM@param}%
377   \def\BKM@param{#3}%
378   \ifx\BKM@param\@empty
379     \def\BKM@param{0}%
380     \def\BKM@temp{1}%
381   \else
382     \BKM@CalcParam
383   \fi
384   \edef\BKM@view{\BKM@view\space\BKM@param}%
385   \def\BKM@param{#4}%
386   \ifx\BKM@param\@empty
387     \def\BKM@param{0}%
388     \def\BKM@temp{1}%

```

```

389 \else
390   \BKM@CalcParam
391 \fi
392 \edef\BKM@view{\BKM@view\space\BKM@param}%
393 \ifnum\BKM@temp>\z@
394   \PackageWarning{bookmark}{Missing parameters for ‘\BKM@type’}%
395 \fi
396 }
397 \def\BKM@CheckXYZ#1#2{%
398   \BKM@@CheckXYZ#1#2#2\@nil
399 }
400 \def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%
401   \def\BKM@param{#1}%
402   \let\BKM@temp\BKM@param
403   \@onelevel@sanitize\BKM@temp
404   \ifx\BKM@param\@empty
405     \let\BKM@param\BKM@null
406   \else
407     \ifx\BKM@temp\BKM@null
408       \else
409         \BKM@CalcParam
410       \fi
411     \fi
412     \edef\BKM@view{\BKM@view\space\BKM@param}%
413     \def\BKM@param{#2}%
414     \let\BKM@temp\BKM@param
415     \@onelevel@sanitize\BKM@temp
416     \ifx\BKM@param\@empty
417       \let\BKM@param\BKM@null
418     \else
419       \ifx\BKM@temp\BKM@null
420         \else
421           \BKM@CalcParam
422         \fi
423       \fi
424       \edef\BKM@view{\BKM@view\space\BKM@param}%
425       \def\BKM@param{#3}%
426       \ifx\BKM@param\@empty
427         \let\BKM@param\BKM@null
428       \fi
429       \edef\BKM@view{\BKM@view\space\BKM@param}%
430 }
431 \def\BKM@null{null}
432 \@onelevel@sanitize\BKM@null
433 \def\BKM@CalcParam{%
434   \begingroup
435   \let\calc\@firstofone
436   \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
437 }
438 \def\BKM@@CalcParam#1#2#3\@nil{%
439   \ifx\calc#1%
440     \ifundefined{calc@assign@dimen}{%
441       \setlength{\dimen@}{\dimexpr#2\relax}%
442     }{%
443       \setlength{\dimen@}{#2}%
444     }%
445     \dimen@.99626\dimen@
446     \edef\BKM@param{\strip@pt\dimen@}%
447     \expandafter\endgroup
448     \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
449   \else
450     \endgroup

```

```

451 \fi
452 }

```

### 3.1.4 Option atend

```

453 \DeclareBoolOption{atend}
454 \def\BKM@DisableOptions{%
455   \DisableKeyvalOption{BKM}{atend}%
456 }

```

### 3.1.5 Driver setup and loading

Driver detection.

```

457 \def\BKM@DefineDriverKey#1{%
458   \define@key{BKM}{#1}[]{%
459     \def\BKM@driver{#1}%
460   }%
461   \g@addto@macro\BKM@DisableOptions{%
462     \DisableKeyvalOption{BKM}{#1}%
463   }%
464 }
465 \BKM@DefineDriverKey{pdftex}
466 \BKM@DefineDriverKey{dvips}
467 \BKM@DefineDriverKey{dvipsone}
468 \BKM@DefineDriverKey{textures}
469 \BKM@DefineDriverKey{dvi pdfm}
470 \BKM@DefineDriverKey{dvi pdfmx}
471 \BKM@DefineDriverKey{xetex}
472 \BKM@DefineDriverKey{vtex}
473 \define@key{BKM}{dvipdfmx-outline-open}[true]{%
474   \expandafter\ifx\csname if#1\expandafter\endcsname
475     \csname iftrue\endcsname
476   \chardef\SpecialDvipdfmxOutlineOpen\@ne
477   \else
478     \chardef\SpecialDvipdfmxOutlineOpen\z@
479   \fi
480 }
481 \g@addto@macro\BKM@DisableOptions{%
482   \DisableKeyvalOption{BKM}{dvipdfmx-outline-open}%
483 }
484 \InputIfFileExists{bookmark.cfg}{-}{-}
485 \providecommand*\BookmarkerDriverDefault{dvips}
486 \ifpdf
487   \def\BKM@driver{pdftex}%
488 \else
489   \ifxetex
490     \def\BKM@driver{dvi pdfmx}%
491   \else
492     \ifvtex
493       \def\BKM@driver{vtex}%
494     \else
495       \edef\BKM@driver{\BookmarkerDriverDefault}%
496     \fi
497   \fi
498 \fi

```

Process options.

```

499 \ProcessKeyvalOptions*
500 \BKM@DisableOptions

```

Driver validation and loading.

```

501 \newif\ifBKM@DvipdfmxOutlineOpen

```

```

502 \begingroup\expandafter\expandafter\expandafter\endgroup
503 \expandafter\ifx\cename SpecialDvipdfmxOutlineOpen\endcename\relax
504 \else
505   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
506     \BKM@DvipdfmxOutlineOpentru
507   \fi
508 \fi

509 \def\BKM@temp{dvipdfmx}%
510 \ifx\BKM@temp\BKM@driver
511   \def\BKM@driver{dvipdfm}%
512 \fi
513 \def\BKM@temp{pdftex}%
514 \ifpdf
515   \ifx\BKM@temp\BKM@driver
516   \else
517     \PackageWarningNoLine{bookmark}{%
518       Wrong driver '\BKM@driver', using 'pdftex' instead%
519     }%
520     \let\BKM@driver\BKM@temp
521   \fi
522 \else
523   \ifx\BKM@temp\BKM@driver
524     \PackageError{bookmark}{%
525       Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
526       Package loading is aborted%
527     }\@ehc
528     \expandafter\expandafter\expandafter\endinput
529   \fi
530   \def\BKM@temp{dvipdfm}%
531   \ifxetex
532     \ifx\BKM@temp\BKM@driver
533     \else
534       \PackageWarningNoLine{bookmark}{%
535         Wrong driver '\BKM@driver',\MessageBreak
536         using 'dvipdfm' for XeTeX instead%
537       }%
538       \let\BKM@driver\BKM@temp
539     \fi
540   \else
541     \def\BKM@temp{vtex}%
542     \ifvtex
543     \ifx\BKM@temp\BKM@driver
544     \else
545       \PackageWarningNoLine{bookmark}{%
546         Wrong driver '\BKM@driver',\MessageBreak
547         using 'vtex' for VTeX instead%
548       }%
549       \let\BKM@driver\BKM@temp
550     \fi
551   \else
552     \ifx\BKM@temp\BKM@driver
553     \PackageError{bookmark}{%
554       Wrong driver, VTeX is not running in PDF mode.\MessageBreak
555       Package loading is aborted%
556     }\@ehc
557     \expandafter\expandafter\expandafter\endinput
558   \fi
559 \fi
560 \fi
561 \fi

562 \InputIfFileExists{bkm-\BKM@driver.def}{-}{-}%
563 \PackageError{bookmark}{%

```

```

564     Unsupported driver '\BKM@driver'.\MessageBreak
565     Package loading is aborted%
566 } \@ehc
567 \endinput
568 }

```

### 3.1.6 Compatibility for hyperref

```

569 \renewcommand*{\pdfbookmark}[3][0]{%
570   \bookmark[level=#1,dest={#3.#1}]{#2}%
571   \hyper@anchorstart{#3.#1}\hyper@anchorend
572 }
573 \renewcommand*{\currentpdfbookmark}{%
574   \pdfbookmark[\BKM@currentlevel]%
575 }
576 \renewcommand*{\subpdfbookmark}{%
577   \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%
578   \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%
579 }
580 \renewcommand*{\belowpdfbookmark}[2]{%
581   \xdef\BKM@gtemp{\number\BKM@currentlevel}%
582   \subpdfbookmark{#1}{#2}%
583   \global\let\BKM@currentlevel\BKM@gtemp
584 }

    section number, text, label, level, file
585 \renewcommand*{\Hy@writebookmark}[5]{%
586   \ifnum#4>\BKM@depth\relax
587   \else
588     \def\BKM@type{#5}%
589     \ifx\BKM@type\Hy@bookmarkstype
590       \begingroup
591         \ifBKM@numbered
592           \let\numberline\Hy@numberline
593           \let\partnumberline\Hy@numberline
594           \let\chapternumberline\Hy@numberline
595         \else
596           \let\numberline\@gobble
597           \let\partnumberline\@gobble
598           \let\chapternumberline\@gobble
599         \fi
600         \bookmark[level=#4,dest={#3}]{#2}%
601       \endgroup
602     \fi
603   \fi
604 }
605 \let\ReadBookmarks\relax
606 \</package>

```

## 3.2 Driver for dvipdfm

```

607 \<dvipdfm>
608 \NeedsTeXFormat{LaTeX2e}
609 \ProvidesFile{bkm-dvipdfm.def}%
610   [2009/12/17 v1.8 bookmark driver for dvipdfm (HO)]%
611 \newcount\BKM@id
612 \BKM@id=\z@
613 \def\BKM@0{000}
614 \newif\ifBKM@sw
615 \newcommand*{\bookmark}[2][]{%
616   \if@filesw
617     \begingroup

```



```

618 \bookmarksetup{#1}%
619 \ifBKM@keeplevel
620 \else
621 \xdef\BKM@currentlevel{\BKM@level}%
622 \fi
623 \edef\BKM@prev{\the\BKM@id}%
624 \global\advance\BKM@id\@ne
625 \BKM@swtrue
626 \@whiles\ifBKM@sw\fi{%
627 \def\BKM@abslevel{1}%
628 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
629 \global\BKM@startatrootfalse
630 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
631 0{\BKM@level}\BKM@abslevel
632 }%
633 \BKM@swfalse
634 \else
635 \expandafter\expandafter\expandafter\BKM@getx
636 \csname BKM@\BKM@prev\endcsname
637 \ifnum\BKM@level>\BKM@x@level\relax
638 \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
639 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
640 {\BKM@prev}{\BKM@level}\BKM@abslevel
641 }%
642 \BKM@swfalse
643 \else
644 \let\BKM@prev\BKM@x@parent
645 \fi
646 \fi
647 }%
648 \csname HyPsd@XeTeXBigCharstrue\endcsname
649 \pdfstringdef\BKM@title{#2}%
650 \edef\BKM@FLAGS{\BKM@PrintStyle}%
651 \let\BKM@action\@empty
652 \ifx\BKM@goto\@empty
653 \ifx\BKM@dest\@empty
654 \ifx\BKM@named\@empty
655 \ifx\BKM@rawaction\@empty
656 \ifx\BKM@uri\@empty
657 \ifx\BKM@page\@empty
658 \PackageError{bookmark}{Missing action}\@ehc
659 \edef\BKM@action{/Dest[@page1/Fit]}%
660 \else
661 \ifx\BKM@view\@empty
662 \def\BKM@view{Fit}%
663 \fi
664 \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]}%
665 \fi
666 \else
667 \BKM@EscapeString\BKM@uri
668 \edef\BKM@action{%
669 /A<<%
670 /S/URI%
671 /URI(\BKM@uri)%
672 >>%
673 }%
674 \fi
675 \else
676 \edef\BKM@action{/A<<\BKM@rawaction>>}%
677 \fi
678 \else
679 \BKM@EscapeName\BKM@named

```

```

680         \edef\BKM@action{%
681             /A<</S/Named/N/\BKM@named>>%
682         }%
683     \fi
684 \else
685     \BKM@EscapeString\BKM@dest
686     \edef\BKM@action{%
687         /A<<%
688         /S/GoTo%
689         /D(\BKM@dest)%
690         >>%
691     }%
692 \fi
693 \else
694     \ifx\BKM@dest\@empty
695         \ifx\BKM@page\@empty
696             \def\BKM@page{0}%
697         \else
698             \BKM@CalcExpr\BKM@page\BKM@page-1%
699         \fi
700         \ifx\BKM@view\@empty
701             \def\BKM@view{Fit}%
702         \fi
703         \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
704     \else
705         \BKM@EscapeString\BKM@dest
706         \edef\BKM@action{/D(\BKM@dest)}%
707     \fi
708     \BKM@EscapeString\BKM@gotor
709     \edef\BKM@action{%
710         /A<<%
711         /S/GoToR%
712         /F(\BKM@gotor)%
713         \BKM@action
714         >>%
715     }%
716 \fi
717 \special{pdf:%
718     out \ifBKM@DvipdfmxOutlineOpen
719         [%
720             \ifBKM@open
721                 \ifnum\BKM@level<\BKM@openlevel
722                     \else
723                         -%
724                     \fi
725                 \else
726                     -%
727                 \fi
728             ] %
729         \fi
730         \BKM@abslevel
731     <<%
732     /Title(\BKM@title)%
733     \ifx\BKM@color\@empty
734     \else
735         /C[\BKM@color]%
736     \fi
737     \ifnum\BKM@FLAGS>\z@
738         /F \BKM@FLAGS
739     \fi
740     \BKM@action
741     >>%

```

```

742     }%
743   \endgroup
744 \fi
745 }

746 \def\BKM@getx#1#2#3{%
747   \def\BKM@x@parent{#1}%
748   \def\BKM@x@level{#2}%
749   \def\BKM@x@abslevel{#3}%
750 }

751 \</dvipdfm>

```

### 3.3 Driver for VTeX

```

752 \<vtx>
753 \NeedsTeXFormat{LaTeX2e}
754 \ProvidesFile{bkm-vtx.def}%
755   [2009/12/17 v1.8 bookmark driver for VTeX (HO)]%

756 \ifvtexpdf
757 \else
758   \PackageWarningNoLine{bookmark}{%
759     The VTeX driver only supports PDF mode%
760   }%
761 \fi

762 \newcount\BKM@id
763 \BKM@id=\z@

764 \def\BKM@O{00}

765 \newif\ifBKM@sw

766 \newcommand*{\bookmark}[2][ ]{%
767   \if@filesw
768     \begingroup
769     \bookmarksetup{#1}%
770     \ifBKM@keeplevel
771     \else
772       \xdef\BKM@currentlevel{\BKM@level}%
773     \fi
774     \edef\BKM@prev{\the\BKM@id}%
775     \global\advance\BKM@id\@ne
776     \BKM@swtrue
777     \@whilesw\ifBKM@sw\fi{%
778       \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
779       \global\BKM@startatrootfalse
780       \def\BKM@parent{0}%
781       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
782         0{\BKM@level}%
783       }%
784       \BKM@swfalse
785     \else
786       \expandafter\expandafter\expandafter\BKM@getx
787       \csname BKM@\BKM@prev\endcsname
788       \ifnum\BKM@level>\BKM@x@level\relax
789       \let\BKM@parent\BKM@prev
790       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
791         {\BKM@prev}{\BKM@level}%
792       }%
793       \BKM@swfalse
794     \else
795       \let\BKM@prev\BKM@x@parent
796     \fi
797   \fi
798 }%

```

```

799 \pdfstringdef\BKM@title{#2}%
800 \BKM@vtx@title
801 \edef\BKM@FLAGS{\BKM@PrintStyle}%
802 \let\BKM@action\@empty
803 \ifx\BKM@goto\@empty
804   \ifx\BKM@dest\@empty
805     \ifx\BKM@named\@empty
806       \ifx\BKM@rawaction\@empty
807         \ifx\BKM@uri\@empty
808           \ifx\BKM@page\@empty
809             \PackageError{bookmark}{Missing action}\@ehc
810             \def\BKM@action{!}%
811           \else
812             \edef\BKM@action{!\BKM@page}%
813           \fi
814         \else
815           \BKM@EscapeString\BKM@uri
816           \edef\BKM@action{%
817             <u=%
818               /S/URI%
819               /URI(\BKM@uri)%
820             >%
821           }%
822         \fi
823       \else
824         \edef\BKM@action{<u=\BKM@rawaction>}%
825       \fi
826     \else
827       \BKM@EscapeName\BKM@named
828       \edef\BKM@action{%
829         <u=%
830           /S/Named%
831           /N/\BKM@named
832         >%
833       }%
834     \fi
835   \else
836     \BKM@EscapeString\BKM@dest
837     \edef\BKM@action{\BKM@dest}%
838   \fi
839 \else
840   \ifx\BKM@dest\@empty
841     \ifx\BKM@page\@empty
842       \def\BKM@page{1}%
843     \fi
844     \ifx\BKM@view\@empty
845       \def\BKM@view{Fit}%
846     \fi
847     \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
848   \else
849     \BKM@EscapeString\BKM@dest
850     \edef\BKM@action{/D(\BKM@dest)}%
851   \fi
852   \BKM@EscapeString\BKM@goto
853   \edef\BKM@action{%
854     <u=%
855       /S/GoToR%
856       /F(\BKM@goto)%
857     \BKM@action
858   >>%
859 }%
860 \fi

```

```

861 \ifx\BKM@color\@empty
862 \let\BKM@RGBcolor\@empty
863 \else
864 \expandafter\BKM@toRGB\BKM@color\@nil
865 \fi
866 \special{%
867 !outline \BKM@action;%
868 p=\BKM@parent,%
869 i=\number\BKM@id,%
870 s=%
871 \ifBKM@open
872 \ifnum\BKM@level<\BKM@openlevel
873 o%
874 \else
875 c%
876 \fi
877 \else
878 c%
879 \fi,%
880 \ifx\BKM@RGBcolor\@empty
881 \else
882 c=\BKM@RGBcolor,%
883 \fi
884 \ifnum\BKM@FLAGS>\z@
885 f=\BKM@FLAGS,%
886 \fi
887 t=\BKM@title
888 }%
889 \endgroup
890 \fi
891 }

892 \def\BKM@getx#1#2{%
893 \def\BKM@x@parent{#1}%
894 \def\BKM@x@level{#2}%
895 }

896 \def\BKM@toRGB#1 #2 #3\@nil{%
897 \let\BKM@RGBcolor\@empty
898 \BKM@toRGBComponent{#1}%
899 \BKM@toRGBComponent{#2}%
900 \BKM@toRGBComponent{#3}%
901 }

902 \def\BKM@toRGBComponent#1{%
903 \dimen@=#1pt\relax
904 \ifdim\dimen@>\z@
905 \ifdim\dimen@<\p@
906 \dimen@=255\dimen@
907 \advance\dimen@ by 32768sp\relax
908 \divide\dimen@ by 65536\relax
909 \dimen@ii=\dimen@
910 \divide\dimen@ii by 16\relax
911 \edef\BKM@RGBcolor{%
912 \BKM@RGBcolor
913 \BKM@toHexDigit\dimen@ii
914 }%
915 \dimen@ii=16\dimen@ii
916 \advance\dimen@-\dimen@ii
917 \edef\BKM@RGBcolor{%
918 \BKM@RGBcolor
919 \BKM@toHexDigit\dimen@
920 }%
921 \else
922 \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%

```

```

923 \fi
924 \else
925 \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
926 \fi
927 }
928 \def\BKM@toHexDigit#1{%
929 \expandafter\ifcase\expandafter\@firstofone\expandafter{\number#1} %
930 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
931 8\or 9\or A\or B\or C\or D\or E\or F%
932 \fi
933 }

934 \begingroup
935 \catcode'\|=0 %
936 \catcode'\|=12 %
937 |gdef|BKM@vtex@title{%
938 |@onelevel@sanitize|BKM@title
939 |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
940 |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
941 |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
942 |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
943 |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
944 |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
945 }%
946 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
947 #1%
948 |ifx||#2||%
949 |else
950 (%
951 |@ReturnAfterFi{%
952 |BKM@vtex@leftparen#2|@nil
953 }%
954 |fi
955 }%
956 |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
957 #1%
958 |ifx||#2||%
959 |else
960 )%
961 |@ReturnAfterFi{%
962 |BKM@vtex@rightparen#2|@nil
963 }%
964 |fi
965 }%
966 |gdef|BKM@vtex@zero#1\0#2|@nil{%
967 #1%
968 |ifx||#2||%
969 |else
970 |noexpand|hv@pdf@char0%
971 |@ReturnAfterFi{%
972 |BKM@vtex@zero#2|@nil
973 }%
974 |fi
975 }%
976 |gdef|BKM@vtex@one#1\1#2|@nil{%
977 #1%
978 |ifx||#2||%
979 |else
980 |noexpand|hv@pdf@char1%
981 |@ReturnAfterFi{%
982 |BKM@vtex@one#2|@nil
983 }%
984 |fi

```

```

985 }%
986 |gdef|BKM@vtex@two#1\2#2|@nil{%
987   #1%
988   |ifx||#2||%
989   |else
990     |noexpand|hv@pdf@char2%
991     |@ReturnAfterFi{%
992     |BKM@vtex@two#2|@nil
993     }%
994   |fi
995 }%
996 |gdef|BKM@vtex@three#1\3#2|@nil{%
997   #1%
998   |ifx||#2||%
999   |else
1000     |noexpand|hv@pdf@char3%
1001     |@ReturnAfterFi{%
1002     |BKM@vtex@three#2|@nil
1003     }%
1004   |fi
1005 }%
1006 |endgroup
1007 \long\def\@ReturnafterFi#1\fi{\fi#1}
1008 </vtex>

```

### 3.4 Driver for pdfTeX

```

1009 <*pdftex>
1010 \NeedsTeXFormat{LaTeX2e}
1011 \ProvidesFile{bkm-pdftex.def}%
1012 [2009/12/17 v1.8 bookmark driver for pdfTeX (H0)]%
1013 \def\BKM@D0@entry#1#2{%
1014   \begingroup
1015     \setkeys{BKM@D0}{#1}%
1016     \def\BKM@D0@title{#2}%
1017     \BKM@UnescapeHex\BKM@D0@title
1018     \expandafter\expandafter\expandafter\BKM@getx
1019     \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1020     \let\BKM@attr\@empty
1021     \ifx\BKM@D0@flags\@empty
1022     \else
1023       \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1024     \fi
1025     \ifx\BKM@D0@color\@empty
1026     \else
1027       \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1028     \fi
1029     \ifx\BKM@attr\@empty
1030     \else
1031       \edef\BKM@attr{attr{\BKM@attr}}%
1032     \fi
1033     \let\BKM@action\@empty
1034     \ifx\BKM@D0@goto\@empty
1035       \ifx\BKM@D0@dest\@empty
1036         \ifx\BKM@D0@named\@empty
1037           \ifx\BKM@D0@rawaction\@empty
1038             \ifx\BKM@D0@uri\@empty
1039               \ifx\BKM@D0@page\@empty
1040                 \PackageError{bookmark}{Missing action}\@ehc
1041                 \edef\BKM@action{goto page1{/Fit}}%
1042               \else
1043                 \ifx\BKM@D0@view\@empty
1044                   \def\BKM@D0@view{Fit}%

```

```

1045         \fi
1046         \edef\BKM@action{goto page\BKM@D0@page{/ \BKM@D0@view}}}%
1047     \fi
1048     \else
1049         \BKM@UnescapeHex\BKM@D0@uri
1050         \BKM@EscapeString\BKM@D0@uri
1051         \edef\BKM@action{user{<</S/URI/URI(\BKM@D0@uri)>>}}}%
1052     \fi
1053     \else
1054         \BKM@UnescapeHex\BKM@D0@rawaction
1055         \edef\BKM@action{%
1056             user{%
1057                 <<%
1058                     \BKM@D0@rawaction
1059                 >>%
1060             }%
1061         }%
1062     \fi
1063     \else
1064         \BKM@EscapeName\BKM@D0@named
1065         \edef\BKM@action{%
1066             user{<</S/Named/N/\BKM@D0@named>>}}}%
1067     }%
1068     \fi
1069     \else
1070         \BKM@UnescapeHex\BKM@D0@dest
1071         \BKM@DefGotoNameAction\BKM@action\BKM@D0@dest
1072     \fi
1073     \else
1074         \ifx\BKM@D0@dest\@empty
1075             \ifx\BKM@D0@page\@empty
1076                 \def\BKM@D0@page{0}%
1077             \else
1078                 \BKM@CalcExpr\BKM@D0@page\BKM@D0@page-1%
1079             \fi
1080             \ifx\BKM@D0@view\@empty
1081                 \def\BKM@D0@view{Fit}%
1082             \fi
1083             \edef\BKM@action{/D[\BKM@D0@page/\BKM@D0@view]}%
1084         \else
1085             \BKM@UnescapeHex\BKM@D0@dest
1086             \BKM@EscapeString\BKM@D0@dest
1087             \edef\BKM@action{/D(\BKM@D0@dest)}%
1088         \fi
1089         \BKM@UnescapeHex\BKM@D0@gotor
1090         \BKM@EscapeString\BKM@D0@gotor
1091         \edef\BKM@action{%
1092             user{%
1093                 <<%
1094                     /S/GoToR%
1095                     /F(\BKM@D0@gotor)%
1096                     \BKM@action
1097                 >>%
1098             }%
1099         }%
1100     \fi
1101     \pdfoutline\BKM@attr\BKM@action
1102         count\ifBKM@D0@open\else-\fi\BKM@x@childs
1103         {\BKM@D0@title}%
1104 \endgroup
1105 }

```

\BKM@DefGotoNameAction Macro \BKM@DefGotoNameAction is a hook for package hypdestopt.



```

1106 \def\BKM@DefGotoNameAction#1#2{%
1107   \BKM@EscapeString\BKM@D0@dest
1108   \edef#1{goto name{#2}}}%
1109 }

1110 </pdfTeX>

```

## 3.5 Drivers with pdfmark specials

### 3.5.1 Driver dvips

```

1111 <*dvips>
1112 \NeedsTeXFormat{LaTeX2e}
1113 \ProvidesFile{bkm-dvips.def}%
1114 [2009/12/17 v1.8 bookmark driver for dvips (HO)]%

1115 \def\BKM@PSHeaderFile#1{%
1116   \special{header=#1}%
1117 }
1118 </dvips>

```

### 3.5.2 Driver dvipsone

```

1119 <*dvipsone>
1120 \NeedsTeXFormat{LaTeX2e}
1121 \ProvidesFile{bkm-dvipsone.def}%
1122 [2009/12/17 v1.8 bookmark driver for dvipsone (HO)]%

1123 \def\BKM@PSHeaderFile#1{%
1124   \special{header=#1}%
1125 }
1126 </dvipsone>

```

### 3.5.3 Driver textures

```

1127 <*textures>
1128 \NeedsTeXFormat{LaTeX2e}
1129 \ProvidesFile{bkm-textures.def}%
1130 [2009/12/17 v1.8 bookmark driver for textures (HO)]%

1131 \def\BKM@PSHeaderFile#1{%
1132   \special{prePostScriptfile #1}%
1133 }
1134 </textures>

```

### 3.5.4 Common part

```

1135 <*pdfmark>
1136 \def\BKM@filename{\jobname.out.ps}
1137 \BKM@PSHeaderFile\BKM@filename

1138 \RequirePackage{atveryend}[2009/12/07]
1139 \AfterLastShipout{\BKM@pdfmark@out}

```

Do not use package rerunfilecheck here, because the file \BKM@filename is not read during the  $\TeX$  run.

```

1140 \def\BKM@pdfmark@out{%
1141   \if@filesw
1142     \newwrite\BKM@file
1143     \immediate\openout\BKM@file=\BKM@filename\relax
1144     \BKM@write{\@percentchar!}%
1145     \BKM@write{/pdfmark where{pop}}}%
1146     \BKM@write{%
1147       {%
1148         /globaldict where{pop globaldict}{userdict}ifelse%
1149         /pdfmark/cleartomark load put%
1150       }%
1151     }%

```

```

1152     \BKM@write{ifelse}%
1153 \else
1154     \let\BKM@write\@gobble
1155     \let\BKM@DO@entry\@gobbletwo
1156 \fi
1157 }
1158 \def\BKM@write#{%
1159 \immediate\write\BKM@file
1160 }

```

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.

```

1161 \def\BKM@DO@entry#1#2{%
1162 \begingroup
1163     \setkeys{BKM@DO}{#1}%
1164     \def\BKM@DO@title{#2}%
1165     \BKM@UnescapeHex\BKM@DO@title
1166     \expandafter\expandafter\expandafter\BKM@getx
1167     \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1168     \let\BKM@attr\@empty
1169     \ifx\BKM@DO@flags\@empty
1170     \else
1171         \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1172     \fi
1173     \ifx\BKM@DO@color\@empty
1174     \else
1175         \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1176     \fi
1177     \let\BKM@action\@empty
1178     \ifx\BKM@DO@goto\@empty
1179     \ifx\BKM@DO@dest\@empty
1180     \ifx\BKM@DO@named\@empty
1181     \ifx\BKM@DO@rawaction\@empty
1182     \ifx\BKM@DO@uri\@empty
1183     \ifx\BKM@DO@page\@empty
1184         \PackageError{bookmark}{Missing action}\@ehc
1185         \edef\BKM@action{%
1186             /Action/GoTo%
1187             /Page 1%
1188             /View[/Fit]%
1189         }%
1190     \else
1191         \ifx\BKM@DO@view\@empty
1192         \def\BKM@DO@view{Fit}%
1193         \fi
1194         \edef\BKM@action{%
1195             /Action/GoTo%
1196             /Page \BKM@DO@page
1197             /View[/\BKM@DO@view]%
1198         }%
1199     \fi
1200     \else
1201         \BKM@UnescapeHex\BKM@DO@uri
1202         \BKM@EscapeString\BKM@DO@uri
1203         \edef\BKM@action{%
1204             /Action<<%
1205             /Subtype/URI%
1206             /URI(\BKM@DO@uri)%
1207             >>%
1208         }%
1209     \fi
1210 \else

```

```

1211         \BKM@UnescapeHex\BKM@DO@rawaction
1212         \edef\BKM@action{%
1213             /Action<<%
1214             \BKM@DO@rawaction
1215             >>%
1216         }%
1217     \fi
1218 \else
1219     \BKM@EscapeName\BKM@DO@named
1220     \edef\BKM@action{%
1221         /Action<<%
1222         /Subtype/Named%
1223         /N/\BKM@DO@named
1224         >>%
1225     }%
1226 \fi
1227 \else
1228     \BKM@UnescapeHex\BKM@DO@dest
1229     \BKM@EscapeString\BKM@DO@dest
1230     \edef\BKM@action{%
1231         /Action/GoTo%
1232         /Dest(\BKM@DO@dest)cvn%
1233     }%
1234 \fi
1235 \else
1236     \ifx\BKM@DO@dest\@empty
1237         \ifx\BKM@DO@page\@empty
1238             \def\BKM@DO@page{1}%
1239         \fi
1240         \ifx\BKM@DO@view\@empty
1241             \def\BKM@DO@view{Fit}%
1242         \fi
1243         \edef\BKM@action{%
1244             /Page \BKM@DO@page
1245             /View[/\BKM@DO@view]%
1246         }%
1247     \else
1248         \BKM@UnescapeHex\BKM@DO@dest
1249         \BKM@EscapeString\BKM@DO@dest
1250         \edef\BKM@action{%
1251             /Dest(\BKM@DO@dest)cvn%
1252         }%
1253     \fi
1254     \BKM@UnescapeHex\BKM@DO@gotor
1255     \BKM@EscapeString\BKM@DO@gotor
1256     \edef\BKM@action{%
1257         /Action/GoToR%
1258         /File(\BKM@DO@gotor)%
1259     \BKM@action
1260 }%
1261 \fi
1262 \BKM@write{[]}%
1263 \BKM@write{/Title(\BKM@DO@title)}%
1264 \ifnum\BKM@x@chlds>\z@
1265     \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chlds}%
1266 \fi
1267 \ifx\BKM@attr\@empty
1268 \else
1269     \BKM@write{\BKM@attr}%
1270 \fi
1271 \BKM@write{\BKM@action}%
1272 \BKM@write{/OUT pdfmark}%

```

```

1273 \endgroup
1274 }
1275 </pdfmark>

```

### 3.6 Common part for pdftex and pdfmark

```
1276 <{*pdftex | pdfmark}>
```

#### 3.6.1 Write auxiliary file

```

1277 \RequirePackage{auxhook}

1278 \AddLineBeginMainAux{%
1279   \string\providecommand\string\BKM@entry[2]{}%
1280 }

1281 \newcount\BKM@id
1282 \BKM@id=\z@

1283 \def\BKM@O{000}

1284 \newif\ifBKM@sw

1285 \newcommand*{\bookmark}[2][]{%
1286   \if@filesw
1287     \begingroup
1288       \bookmarksetup{#1}%
1289       \ifBKM@keeplevel
1290       \else
1291         \xdef\BKM@currentlevel{\BKM@level}%
1292       \fi
1293       \edef\BKM@prev{\the\BKM@id}%
1294       \global\advance\BKM@id\@ne
1295       \BKM@swtrue
1296       \@whiles\ifBKM@sw\fi{%
1297         \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1298           \global\BKM@startatrootfalse
1299           \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1300             0{\BKM@level}0%
1301           }%
1302           \BKM@swfalse
1303         \else
1304           \expandafter\expandafter\expandafter\BKM@getx
1305             \csname BKM@\BKM@prev\endcsname
1306           \ifnum\BKM@level>\BKM@x@level\relax
1307             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1308               {\BKM@prev}{\BKM@level}0%
1309             }%
1310             \ifnum\BKM@prev>\z@
1311               \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1312               \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1313                 {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1314               }%
1315             \fi
1316             \BKM@swfalse
1317           \else
1318             \let\BKM@prev\BKM@x@parent
1319           \fi
1320         \fi
1321       }%
1322       \pdfstringdef\BKM@title{#2}%
1323       \edef\BKM@FLAGS{\BKM@PrintStyle}%
1324       \csname BKM@HypDestOptHook\endcsname
1325       \BKM@EscapeHex\BKM@dest
1326       \BKM@EscapeHex\BKM@uri
1327       \BKM@EscapeHex\BKM@goto
1328       \BKM@EscapeHex\BKM@rawaction

```

```

1329 \BKM@EscapeHex\BKM@title
1330 \immediate\write\@mainaux{%
1331 \string\BKM@entry{%
1332 id=\number\BKM@id
1333 \ifBKM@open
1334 \ifnum\BKM@level<\BKM@openlevel
1335 ,open%
1336 \fi
1337 \fi
1338 \BKM@auxentry{dest}%
1339 \BKM@auxentry{named}%
1340 \BKM@auxentry{uri}%
1341 \BKM@auxentry{gotor}%
1342 \BKM@auxentry{page}%
1343 \BKM@auxentry{view}%
1344 \BKM@auxentry{rawaction}%
1345 \BKM@auxentry{color}%
1346 \ifnum\BKM@FLAGS>\z@
1347 ,flags=\BKM@FLAGS
1348 \fi
1349 }{\BKM@title}%
1350 }%
1351 \endgroup
1352 \fi
1353 }

1354 \def\BKM@getx#1#2#3{%
1355 \def\BKM@x@parent{#1}%
1356 \def\BKM@x@level{#2}%
1357 \def\BKM@x@childs{#3}%
1358 }

1359 \def\BKM@auxentry#1{%
1360 \expandafter\ifx\csname BKM@#1\endcsname\@empty
1361 \else
1362 ,#1={\csname BKM@#1\endcsname}%
1363 \fi
1364 }

```

### 3.6.2 Read auxiliary data

```

1365 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1366 \DeclareStringOption[0]{id}
1367 \DeclareBoolOption{open}
1368 \DeclareStringOption{flags}
1369 \DeclareStringOption{color}
1370 \DeclareStringOption{dest}
1371 \DeclareStringOption{named}
1372 \DeclareStringOption{uri}
1373 \DeclareStringOption{gotor}
1374 \DeclareStringOption{page}
1375 \DeclareStringOption{view}
1376 \DeclareStringOption{rawaction}

1377 \AtBeginDocument{%
1378 \let\BKM@entry\BKM@DO@entry
1379 }

1380 </pdfTeX | pdfmark>

```

## 3.7 Option attend

### 3.7.1 Hook

```

1381 <*package>
1382 \ifBKM@attend
1383 \else

```

```

\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
                given.
1384 \newcommand{\BookmarkAtEnd}[1]{%
1385     \PackageWarning{bookmark}{%
1386         Ignored, because option ‘atend’ is missing%
1387     }%
1388 }%

1389 \expandafter\endinput
1390 \fi

\BookmarkAtEnd

1391 \newcommand*{\BookmarkAtEnd}{%
1392     \g@addto@macro\BKM@EndHook
1393 }

1394 \let\BKM@EndHook\@empty
1395 \</package>

```

### 3.7.2 Drivers using hooks at end of document

The following drivers use package `atveryend`’s `\AfterLastShipout`, because they still need the `..aux` file.

- Driver `pdftex` uses `\pdfoutline` that can be used after the last page.
- PostScript drivers such as `dvips` use an external PostScript header file for the bookmarks. File writing can be done after the last shipout page, but before the `..aux` file is closed.

```

1396 <*pdftex | pdfmark>
1397 \ifBKM@atend
1398     \AfterLastShipout{%
1399         \BKM@EndHook
1400     }%
1401 \fi
1402 </pdftex | pdfmark>

```

### 3.7.3 Drivers using `\AtEndDvi`

The other drivers implement `\bookmark` using `\special` commands. Thus the last bookmarks must be put on the last page, not afterwards. `\AtEndDocument` cannot be used, because it is too late, the last page can already be output. Therefore we use package `atendddvi` that uses the help of packages `atbegshi` and `zref`. The argument of `\AtEndDvi` is put at the end of the last page. At least two L<sup>A</sup>T<sub>E</sub>X runs are necessary.

```

1403 <*dvi pdfm | vtex>
1404 \ifBKM@atend
1405     \RequirePackage{atendddvi}%
1406     \AtEndDvi{\BKM@EndHook}%
1407 \fi
1408 </dvi pdfm | vtex>

```

## 4 Installation

### 4.1 Download

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

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

[CTAN:macros/latex/contrib/oberdiek/bookmark.pdf](http://ctan.org/ctan/ctan/macros/latex/contrib/oberdiek/bookmark.pdf) Documentation.

<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp://ftp.ctan.org/tex-archive/)

**Bundle.** All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#)

*TDS* refers to the standard “A Directory Structure for  $\text{\TeX}$  Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

## 4.2 Bundle installation

**Unpacking.** Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

**Script installation.** Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package `attachfile2` comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

## 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting `docstrip` archive. The files are extracted by running the `.dtx` through plain- $\text{\TeX}$ :

```
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>	$\rightarrow$ <code>tex/latex/oberdiek/bookmark.sty</code>
<code>bkm-dvipdfm.def</code>	$\rightarrow$ <code>tex/latex/oberdiek/bkm-dvipdfm.def</code>
<code>bkm-dvips.def</code>	$\rightarrow$ <code>tex/latex/oberdiek/bkm-dvips.def</code>
<code>bkm-dvipsones.def</code>	$\rightarrow$ <code>tex/latex/oberdiek/bkm-dvipsones.def</code>
<code>bkm-textures.def</code>	$\rightarrow$ <code>tex/latex/oberdiek/bkm-textures.def</code>
<code>bkm-pdfTeX.def</code>	$\rightarrow$ <code>tex/latex/oberdiek/bkm-pdfTeX.def</code>
<code>bkm-vTeX.def</code>	$\rightarrow$ <code>tex/latex/oberdiek/bkm-vTeX.def</code>
<code>bookmark.pdf</code>	$\rightarrow$ <code>doc/latex/oberdiek/bookmark.pdf</code>
<code>bookmark-example.tex</code>	$\rightarrow$ <code>doc/latex/oberdiek/bookmark-example.tex</code>
<code>bookmark.dtx</code>	$\rightarrow$ <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`.

## 4.4 Refresh file name databases

If your  $\text{\TeX}$  distribution (`te $\text{\TeX}$` , `mik $\text{\TeX}$` , ...) relies on file name databases, you must refresh these. For example, `te $\text{\TeX}$`  users run `texhash` or `mkTeXlsr`.

## 4.5 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-pdfTeX users.

[2007/02/21 v0.3]

- Dependency from pdfTeX 1.30 removed by using package pdfescape.

[2007/02/22 v0.4]

- hyperref's bookmarkstype respected.

[2007/03/02 v0.5]

- Driver options vtex (PDF mode), dvipsone, and textures added.
- Implementation of option depth completed. Division names are supported, see hyperref's option bookmarksdepth.
- hyperref's options bookmarksopen, bookmarksopenlevel, and bookmarksdepth respected.

[2007/03/03 v0.6]

- Option numbered as alias for hyperref's bookmarksnumbered.



[2007/03/07 v0.7]

- Dependency from  $\epsilon$ -TeX removed.

[2007/04/09 v0.8]

- Option `atend` added.
- Option `rgbcolor` removed. `rgbcolor=<r> <g> <b>` can be replaced by `color=[rgb]{<r>,<g>,<b>}`.
- Support of recent cvs version (2007-03-29) of `dvipdfmx` that extends the `\special` for bookmarks to specify open outline entries. Option `dvipdfmx-outline-open` or `\SpecialDvipdfmxOutlineOpen` notify the package.

[2007/04/25 v0.9]

- The syntax of `\special` of `dvipdfmx`, if feature `dvipdfmx-outline-open` is enabled, has changed. Now cvs version 2007-04-25 is needed.

[2007/05/29 v1.0]

- Bug fix in code for second parameter of XYZ.

[2007/07/13 v1.1]

- Fix for `pdfmark` with `GoToR` action.

[2007/09/25 v1.2]

- `pdfmark` driver respects `\nofiles`.

[2008/08/08 v1.3]

- Package `flags` replaced by package `bitset`. Now flags are also supported without  $\epsilon$ -TeX.
- Hook for package `hypdestopt` added.

[2008/09/13 v1.4]

- Fix for bug introduced in v1.3, package `flags` is one-based, but package `bitset` is zero-based. Thus options `bold` and `italic` are wrong in v1.3. (Daniel Müllner)

[2009/08/13 v1.5]

- Except for driver options the other options are now local options. This resolves a problem with KOMA-Script v3.00 and its option `open`.

[2009/12/06 v1.6]

- Use of package `atveryend` for drivers `pdftex` and `pdfmark`.

[2009/12/07 v1.7]

- Use of package `atveryend` fixed.

[2009/12/17 v1.8]

- Support of `hyperref` 2009/12/17 v6.79v for XeTeX.

## 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.

Symbols		
\"	.....	33
\(	.....	939, 946
\)	.....	940, 956
\@ReturnafterFi	.....	1007
\@bookmarksopenlevel	.....	174
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