

# 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`, `dvipsone`, `textures`, `dvipdfm` (`xetex`), and `vtex`. The  $\TeX$  engines `pdf $\TeX$` , `Xe $\TeX$` , and `V $\TeX$`  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 `dvipdfm` 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  $\epsilon$ - $\TeX$  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 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:	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`) uses L<sup>A</sup>T<sub>E</sub>X's `\AtEndDocument` for this purpose.

However `\AtEndDocument` cannot be used in general. The last page can already be finished if the hook of `\AtEndDocument` is called. 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}[2008/09/13]
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: \text{"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 [2008/09/13 v1.4 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}
142 \RequirePackage{ifxetex}
143 \RequirePackage{ifvtex}
144 \RequirePackage{hyperref}
145 \RequirePackage{auxhook}
146 \RequirePackage{kvoptions}
147 \RequirePackage{hycolor}
148 \RequirePackage{bitset}
```

### 3.1.2 Package options

```
149 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
150 \newcommand*{\bookmarksetup}{\setkeys{BKM}}
151 \DeclareBoolOption[\ifHy@bookmarksopen true\else false\fi]{open}
152 \DeclareStringOption[\maxdimen]{openlevel}
```



```

153 \edef\BKM@openlevel{\number\@bookmarksopenlevel}
154 %\DeclareStringOption[\c@tocdepth]{depth}
155 \begingroup\expandafter\expandafter\expandafter\endgroup
156 \expandafter\ifx\csname Hy@bookmarksdepth\endcsname\relax
157   \def\BKM@depth{\c@tocdepth}%
158 \else
159   \let\BKM@depth\Hy@bookmarksdepth
160 \fi
161 \define@key{BKM}{depth}[]{%
162   \edef\BKM@param{#1}%
163   \ifx\BKM@param\@empty
164     \def\BKM@depth{\c@tocdepth}%
165   \else
166     \ifundefined{toclevel@\BKM@param}{%
167       \onelevel@sanitize\BKM@param
168       \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
169       \ifcase 0\expandafter\ifx\BKM@temp-1\fi
170         \expandafter\ifnum\expandafter'\BKM@temp>47 %
171           \expandafter\ifnum\expandafter'\BKM@temp<58 %
172             1%
173           \fi
174         \fi
175         \relax
176         \PackageWarning{bookmark}{%
177           Unknown document division name (\BKM@param)%
178         }%
179       \else
180         \BKM@SetDepth\BKM@param
181       \fi
182     }{%
183       \BKM@SetDepth{\csname toclevel@\BKM@param\endcsname}%
184     }%
185   \fi
186 }
187 \def\BKM@SetDepth#1{%
188   \begingroup
189   \setbox\z@=\hbox{%
190     \count@=#1\relax
191     \expandafter
192   }%
193   \expandafter\endgroup
194   \expandafter\def\expandafter\BKM@depth\expandafter{\the\count@}%
195 }
196 \DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
197 \DeclareBoolOption{keeplevel}
198 \DeclareBoolOption{startatroot}
199 \define@key{BKM}{rellevel}{%
200   \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
201 }
202 \def\BKM@currentlevel{0}

```

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

```

203 \DeclareBoolOption[%
204   \ifHy@bookmarksnumbered true\else false\fi
205 ]{numbered}
206 \g@addto@macro\BKM@numberedtrue{%
207   \let\ifHy@bookmarksnumbered\iftrue
208 }
209 \g@addto@macro\BKM@numberedfalse{%
210   \let\ifHy@bookmarksnumbered\iffalse
211 }
212 \g@addto@macro\Hy@bookmarksnumberedtrue{%
213   \let\ifBKM@numbered\iftrue

```

```

214 }
215 \g@addto@macro\Hy@bookmarksnumberedfalse{%
216   \let\ifBKM@numbered\iffalse
217 }

```

### Redefinitions `hyperref`'s options

```

218 \def\BKM@PatchHyperrefOption#1{%
219   \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
220 }
221 \def\BKM@@PatchHyperrefOption#1{%
222   \expandafter\BKM@@@PatchHyperrefOption#1{##1}\BKM@nil#1%
223 }
224 \def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
225   \def#2##1{%
226     #1%
227     \bookmarksetup{#3={##1}}%
228   }%
229 }
230 \BKM@PatchHyperrefOption{bookmarksopen}{open}
231 \BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
232 \BKM@PatchHyperrefOption{bookmarksdepth}{depth}

```

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

```

233 \bitsetReset{BKM@style}%
234 \define@key{BKM}{italic}[true]{%
235   \expandafter\ifx\csname if#1\endcsname\iftrue
236     \bitsetSet{BKM@style}{0}%
237   \else
238     \bitsetClear{BKM@style}{0}%
239   \fi
240 }%
241 \define@key{BKM}{bold}[true]{%
242   \expandafter\ifx\csname if#1\endcsname\iftrue
243     \bitsetSet{BKM@style}{1}%
244   \else
245     \bitsetClear{BKM@style}{1}%
246   \fi
247 }%
248 \def\BKM@PrintStyle{%
249   \bitsetGetDec{BKM@style}%
250 }%

```

### Options for color.

```

251 \define@key{BKM}{color}{%
252   \HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}%
253 }
254 \let\BKM@color\@empty

```

### 3.1.3 Action options

```

255 \DeclareStringOption{dest}
256 \DeclareStringOption{named}
257 \DeclareStringOption{uri}
258 \DeclareStringOption{gotor}
259 \DeclareStringOption{rawaction}

260 \define@key{BKM}{page}{%
261   \def\BKM@page{#1}%
262   \ifx\BKM@page\@empty
263   \else
264     \edef\BKM@page{\number\BKM@page}%

```

```

265 \ifnum\BKM@page>\z@
266 \else
267 \PackageError{bookmark}{Page must be positive}\@ehc
268 \def\BKM@page{1}%
269 \fi
270 \fi
271 }
272 \let\BKM@page\@empty
273 \define@key{BKM}{view}{%
274 \BKM@CheckView{#1}%
275 }
276 \let\BKM@view\@empty
277 \def\BKM@CheckView#1{%
278 \BKM@CheckViewType#1 \@nil
279 }
280 \def\BKM@CheckViewType#1 #2\@nil{%
281 \def\BKM@type{#1}%
282 \@onelevel@sanitize\BKM@type
283 \BKM@TestViewType{Fit}{}%
284 \BKM@TestViewType{FitB}{}%
285 \BKM@TestViewType{FitH}{%
286 \BKM@CheckParam#2 \@nil{top}%
287 }%
288 \BKM@TestViewType{FitBH}{%
289 \BKM@CheckParam#2 \@nil{top}%
290 }%
291 \BKM@TestViewType{FitV}{%
292 \BKM@CheckParam#2 \@nil{bottom}%
293 }%
294 \BKM@TestViewType{FitBV}{%
295 \BKM@CheckParam#2 \@nil{bottom}%
296 }%
297 \BKM@TestViewType{FitR}{%
298 \BKM@CheckRect{#2}{ }%
299 }%
300 \BKM@TestViewType{XYZ}{%
301 \BKM@CheckXYZ{#2}{ }%
302 }%
303 \@car{%
304 \PackageError{pdfbookmark}{%
305 Unknown view type '\BKM@type',\MessageBreak
306 using 'FitH' instead%
307 }\@ehc
308 \def\BKM@view{FitH}%
309 }%
310 \@nil
311 }
312 \def\BKM@TestViewType#1{%
313 \def\BKM@temp{#1}%
314 \@onelevel@sanitize\BKM@temp
315 \ifx\BKM@type\BKM@temp
316 \let\BKM@view\BKM@temp
317 \expandafter\@car
318 \else
319 \expandafter\@gobble
320 \fi
321 }
322 \def\BKM@CheckParam#1 #2\@nil#3{%
323 \def\BKM@param{#1}%
324 \ifx\BKM@param\@empty
325 \PackageWarning{bookmark}{%
326 Missing parameter (#3) for '\BKM@type',\MessageBreak

```

```

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

```

```

389 \fi
390 \fi
391 \edef\BKM@view{\BKM@view\space\BKM@param}%
392 \def\BKM@param{#2}%
393 \let\BKM@temp\BKM@param
394 \@onelevel@sanitize\BKM@temp
395 \ifx\BKM@param\empty
396 \let\BKM@param\BKM@null
397 \else
398 \ifx\BKM@temp\BKM@null
399 \else
400 \BKM@CalcParam
401 \fi
402 \fi
403 \edef\BKM@view{\BKM@view\space\BKM@param}%
404 \def\BKM@param{#3}%
405 \ifx\BKM@param\empty
406 \let\BKM@param\BKM@null
407 \fi
408 \edef\BKM@view{\BKM@view\space\BKM@param}%
409 }
410 \def\BKM@null{null}
411 \@onelevel@sanitize\BKM@null
412 \def\BKM@CalcParam{%
413 \begin{group}
414 \let\calc\@firstofone
415 \expandafter\BKM@@CalcParam\BKM@param\empty\empty\@nil
416 }
417 \def\BKM@@CalcParam#1#2#3\@nil{%
418 \ifx\calc#1%
419 \@ifundefined{calc@assign@dimen}{%
420 \setlength{\dimen@}{\dimexpr#2\relax}%
421 }{%
422 \setlength{\dimen@}{#2}%
423 }%
424 \dimen@.99626\dimen@
425 \edef\BKM@param{\strip@pt\dimen@}%
426 \expandafter\endgroup
427 \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
428 \else
429 \endgroup
430 \fi
431 }

```

### 3.1.4 Option `atend`

```

432 \DeclareBoolOption{atend}
433 \def\BKM@DisableOptions{%
434 \DisableKeyvalOption{BKM}{atend}%
435 }

```

### 3.1.5 Driver setup and loading

#### Driver detection.

```

436 \def\BKM@DefineDriverKey#1{%
437 \define@key{BKM}{#1}[]{%
438 \def\BKM@driver{#1}%
439 }%
440 \g@addto@macro\BKM@DisableOptions{%
441 \DisableKeyvalOption{BKM}{#1}%
442 }%
443 }
444 \BKM@DefineDriverKey{pdftex}
445 \BKM@DefineDriverKey{dvips}

```

```

446 \BKM@DefineDriverKey{dvipsone}
447 \BKM@DefineDriverKey{textures}
448 \BKM@DefineDriverKey{dvipdfm}
449 \BKM@DefineDriverKey{dvipdfmx}
450 \BKM@DefineDriverKey{xetex}
451 \BKM@DefineDriverKey{vtex}
452 \define@key{BKM}{dvipdfmx-outline-open}[true]{%
453   \expandafter\ifx\csname if#1\expandafter\endcsname
454     \csname iftrue\endcsname
455     \chardef\SpecialDvipdfmxOutlineOpen\@ne
456   \else
457     \chardef\SpecialDvipdfmxOutlineOpen\z@
458   \fi
459 }
460 \g@addto@macro\BKM@DisableOptions{%
461   \DisableKeyvalOption{BKM}{dvipdfmx-outline-open}%
462 }

463 \InputIfFileExists{bookmark.cfg}{\{}}{}
464 \providecommand*\BookmarkDriverDefault{dvips}
465 \ifpdf
466   \def\BKM@driver{pdftex}%
467 \else
468   \ifxetex
469     \def\BKM@driver{dvipdfm}%
470   \else
471     \ifvtex
472       \def\BKM@driver{vtex}%
473     \else
474       \edef\BKM@driver{\BookmarkDriverDefault}%
475     \fi
476   \fi
477 \fi

```

### Process options.

```

478 \ProcessKeyvalOptions*
479 \BKM@DisableOptions

```

### Driver validation and loading.

```

480 \newif\ifBKM@DvipdfmxOutlineOpen
481 \begingroup\expandafter\expandafter\expandafter\endgroup
482 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
483 \else
484   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
485     \BKM@DvipdfmxOutlineOpentru
486   \fi
487 \fi

488 \def\BKM@temp{dvipdfmx}%
489 \ifx\BKM@temp\BKM@driver
490   \def\BKM@driver{dvipdfm}%
491 \fi
492 \def\BKM@temp{pdftex}%
493 \ifpdf
494   \ifx\BKM@temp\BKM@driver
495   \else
496     \PackageWarningNoLine{bookmark}{%
497       Wrong driver ‘\BKM@driver’, using ‘pdftex’ instead%
498     }%
499     \let\BKM@driver\BKM@temp
500   \fi
501 \else
502   \ifx\BKM@temp\BKM@driver

```

```

503 \PackageError{bookmark}{%
504   Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
505   Package loading is aborted%
506 } \@ehc
507 \expandafter\expandafter\expandafter\endinput
508 \fi
509 \def\BKM@temp{dvipdfm}%
510 \ifxetex
511   \ifx\BKM@temp\BKM@driver
512     \else
513       \PackageWarningNoLine{bookmark}{%
514         Wrong driver '\BKM@driver',\MessageBreak
515         using 'dvipdfm' for XeTeX instead%
516       }%
517       \let\BKM@driver\BKM@temp
518     \fi
519   \else
520     \def\BKM@temp{vtex}%
521     \ifvtex
522       \ifx\BKM@temp\BKM@driver
523         \else
524           \PackageWarningNoLine{bookmark}{%
525             Wrong driver '\BKM@driver',\MessageBreak
526             using 'vtex' for VTeX instead%
527           }%
528           \let\BKM@driver\BKM@temp
529         \fi
530       \else
531         \ifx\BKM@temp\BKM@driver
532           \PackageError{bookmark}{%
533             Wrong driver, VTeX is not running in PDF mode.\MessageBreak
534             Package loading is aborted%
535           } \@ehc
536           \expandafter\expandafter\expandafter\endinput
537         \fi
538       \fi
539     \fi
540 \fi
541 \InputIfFileExists{bkm-\BKM@driver.def}{\fi}{%
542   \PackageError{bookmark}{%
543     Unsupported driver '\BKM@driver'.\MessageBreak
544     Package loading is aborted%
545   } \@ehc
546 \endinput
547 }

```

### 3.1.6 Compatibility for hyperref

```

548 \renewcommand*{\pdfbookmark}[3][0]{%
549   \bookmark[level=#1,dest={#3.#1}]{#2}%
550   \hyper@anchorstart{#3.#1}\hyper@anchorend
551 }
552 \renewcommand*{\currentpdfbookmark}{%
553   \pdfbookmark[\BKM@currentlevel]%
554 }
555 \renewcommand*{\subpdfbookmark}{%
556   \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%
557   \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%
558 }
559 \renewcommand*{\belowpdfbookmark}[2]{%
560   \xdef\BKM@gtemp{\number\BKM@currentlevel}%
561   \subpdfbookmark{#1}{#2}%
562   \global\let\BKM@currentlevel\BKM@gtemp

```

```

563 }

      section number, text, label, level, file
564 \renewcommand*{\Hy@writebookmark}[5]{%
565   \ifnum#4>\BKM@depth\relax
566   \else
567     \def\BKM@type{#5}%
568     \ifx\BKM@type\Hy@bookmarkstype
569       \begingroup
570         \ifBKM@numbered
571           \let\numberline\Hy@numberline
572           \let\partnumberline\Hy@numberline
573           \let\chapternumberline\Hy@numberline
574         \else
575           \let\numberline\@gobble
576           \let\partnumberline\@gobble
577           \let\chapternumberline\@gobble
578         \fi
579         \bookmark[level=#4,dest={#3}]{#2}%
580       \endgroup
581     \fi
582   \fi
583 }

584 \let\ReadBookmarks\relax
585 \</package>

```

### 3.2 Driver for dvipdfm

```

586 \<dvipdfm>
587 \NeedsTeXFormat{LaTeX2e}
588 \ProvidesFile{bkm-dvipdfm.def}%
589   [2008/09/13 v1.4 bookmark driver for dvipdfm (HO)]%

590 \newcount\BKM@id
591 \BKM@id=\z@

592 \def\BKM@O{000}

593 \newif\ifBKM@sw

594 \newcommand*{\bookmark}[2][ ]{%
595   \if@filesw
596     \begingroup
597       \bookmarksetup{#1}%
598       \ifBKM@keeplevel
599       \else
600         \xdef\BKM@currentlevel{\BKM@level}%
601       \fi
602       \edef\BKM@prev{\the\BKM@id}%
603       \global\advance\BKM@id\@ne
604       \BKM@swtrue
605       \@whilesw\ifBKM@sw\fi{%
606         \def\BKM@abslevel{1}%
607         \ifnum\ifBKM@startatroot\z@else\BKM@prev\fi=\z@
608           \global\BKM@startatrootfalse
609           \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
610             0{\BKM@level}\BKM@abslevel
611           }%
612           \BKM@swfalse
613         \else
614           \expandafter\expandafter\expandafter\BKM@getx
615             \csname BKM@\BKM@prev\endcsname
616           \ifnum\BKM@level>\BKM@x@level\relax
617             \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
618             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
619               {\BKM@prev}{\BKM@level}\BKM@abslevel

```



```

620         }%
621         \BKM@swfalse
622     \else
623         \let\BKM@prev\BKM@x@parent
624     \fi
625 \fi
626 }%
627 \pdfstringdef\BKM@title{#2}%
628 \edef\BKM@FLAGS{\BKM@PrintStyle}%
629 \let\BKM@action\@empty
630 \ifx\BKM@goto\@empty
631     \ifx\BKM@dest\@empty
632         \ifx\BKM@named\@empty
633             \ifx\BKM@rawaction\@empty
634                 \ifx\BKM@uri\@empty
635                     \ifx\BKM@page\@empty
636                         \PackageError{bookmark}{Missing action}\@ehc
637                         \edef\BKM@action{/Dest[@page1/Fit]}}%
638                     \else
639                         \ifx\BKM@view\@empty
640                             \def\BKM@view{Fit}%
641                         \fi
642                         \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]}}%
643                     \fi
644                 \else
645                     \BKM@EscapeString\BKM@uri
646                     \edef\BKM@action{%
647                         /A<<%
648                         /S/URI%
649                         /URI(\BKM@uri)%
650                         >>%
651                     }%
652                 \fi
653             \else
654                 \edef\BKM@action{/A<<\BKM@rawaction>>}}%
655             \fi
656         \else
657             \BKM@EscapeName\BKM@named
658             \edef\BKM@action{%
659                 /A<</S/Named/N/\BKM@named>>%
660             }%
661         \fi
662     \else
663         \BKM@EscapeString\BKM@dest
664         \edef\BKM@action{%
665             /A<<%
666             /S/GoTo%
667             /D(\BKM@dest)%
668             >>%
669         }%
670     \fi
671 \else
672     \ifx\BKM@dest\@empty
673         \ifx\BKM@page\@empty
674             \def\BKM@page{0}%
675         \else
676             \BKM@CalcExpr\BKM@page\BKM@page-1%
677         \fi
678         \ifx\BKM@view\@empty
679             \def\BKM@view{Fit}%
680         \fi
681         \edef\BKM@action{/D[\BKM@page/\BKM@view]}}%

```

```

682         \else
683             \BKM@EscapeString\BKM@dest
684             \edef\BKM@action{/D(\BKM@dest)}%
685         \fi
686         \BKM@EscapeString\BKM@goto
687         \edef\BKM@action{%
688             /A<<%
689             /S/GoToR%
690             /F(\BKM@goto)%
691             \BKM@action
692         >>%
693     }%
694 \fi
695 \special{pdf:%
696     out \ifBKM@DvipdfmxOutlineOpen
697         [%
698             \ifBKM@open
699                 \ifnum\BKM@level<\BKM@openlevel
700                     \else
701                         -%
702                     \fi
703                 \else
704                     -%
705                 \fi
706             ] %
707         \fi
708         \BKM@abslevel
709     <<%
710         /Title(\BKM@title)%
711         \ifx\BKM@color\@empty
712             \else
713                 /C[\BKM@color]%
714             \fi
715         \ifnum\BKM@FLAGS>\z@
716             /F \BKM@FLAGS
717         \fi
718         \BKM@action
719     >>%
720 }%
721 \endgroup
722 \fi
723 }

724 \def\BKM@getx#1#2#3{%
725     \def\BKM@x@parent{#1}%
726     \def\BKM@x@level{#2}%
727     \def\BKM@x@abslevel{#3}%
728 }

729 </dviPDF>

```

### 3.3 Driver for VTeX

```

730 <*vtex>
731 \NeedsTeXFormat{LaTeX2e}
732 \ProvidesFile{bkm-vtex.def}%
733 [2008/09/13 v1.4 bookmark driver for VTeX (HO)]%
734 \ifvtexpdf
735 \else
736     \PackageWarningNoLine{bookmark}{%
737         The VTeX driver only supports PDF mode%
738     }%
739 \fi
740 \newcount\BKM@id

```

```

741 \BKM@id=\z@
742 \def\BKM@O{00}
743 \newif\ifBKM@sw
744 \newcommand*{\bookmark}[2][\]{%
745   \if@filesw
746     \begingroup
747       \bookmarksetup{#1}%
748       \ifBKM@keeplevel
749         \else
750           \xdef\BKM@currentlevel{\BKM@level}%
751         \fi
752         \edef\BKM@prev{\the\BKM@id}%
753         \global\advance\BKM@id\@ne
754         \BKM@swtrue
755         \@whiles\ifBKM@sw\fi{%
756           \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
757             \global\BKM@startatrootfalse
758             \def\BKM@parent{0}%
759             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
760               0{\BKM@level}%
761             }%
762             \BKM@swfalse
763           \else
764             \expandafter\expandafter\expandafter\BKM@getx
765               \csname BKM@\BKM@prev\endcsname
766             \ifnum\BKM@level>\BKM@x@level\relax
767               \let\BKM@parent\BKM@prev
768               \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
769                 {\BKM@prev}{\BKM@level}%
770               }%
771               \BKM@swfalse
772             \else
773               \let\BKM@prev\BKM@x@parent
774             \fi
775           \fi
776         }%
777         \pdfstringdef\BKM@title{#2}%
778         \BKM@vtx@title
779         \edef\BKM@FLAGS{\BKM@PrintStyle}%
780         \let\BKM@action\@empty
781         \ifx\BKM@goto\@empty
782           \ifx\BKM@dest\@empty
783             \ifx\BKM@named\@empty
784               \ifx\BKM@rawaction\@empty
785                 \ifx\BKM@uri\@empty
786                   \ifx\BKM@page\@empty
787                     \PackageError{bookmark}{Missing action}\@ehc
788                     \def\BKM@action{!1}%
789                   \else
790                     \edef\BKM@action{!\BKM@page}%
791                   \fi
792                 \else
793                   \BKM@EscapeString\BKM@uri
794                   \edef\BKM@action{%
795                     <u=%
796                     /S/URI%
797                     /URI(\BKM@uri)%
798                     >%
799                   }%
800                 \fi
801               \else
802                 \edef\BKM@action{<u=\BKM@rawaction>}%

```

```

803         \fi
804     \else
805         \BKM@EscapeName\BKM@named
806         \edef\BKM@action{%
807             <u=%
808                 /S/Named%
809                 /N/\BKM@named
810             >%
811         }%
812     \fi
813 \else
814     \BKM@EscapeString\BKM@dest
815     \edef\BKM@action{\BKM@dest}%
816 \fi
817 \else
818     \ifx\BKM@dest\@empty
819         \ifx\BKM@page\@empty
820             \def\BKM@page{1}%
821         \fi
822         \ifx\BKM@view\@empty
823             \def\BKM@view{Fit}%
824         \fi
825         \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
826     \else
827         \BKM@EscapeString\BKM@dest
828         \edef\BKM@action{/D(\BKM@dest)}%
829     \fi
830     \BKM@EscapeString\BKM@goto
831     \edef\BKM@action{%
832         <u=%
833             /S/GoToR%
834             /F(\BKM@goto)%
835             \BKM@action
836         >>%
837     }%
838 \fi
839 \ifx\BKM@color\@empty
840     \let\BKM@RGBcolor\@empty
841 \else
842     \expandafter\BKM@toRGB\BKM@color\@nil
843 \fi
844 \special{%
845     !outline \BKM@action;%
846     p=\BKM@parent,%
847     i=\number\BKM@id,%
848     s=%
849     \ifBKM@open
850         \ifnum\BKM@level<\BKM@openlevel
851             o%
852         \else
853             c%
854         \fi
855     \else
856         c%
857     \fi,%
858     \ifx\BKM@RGBcolor\@empty
859     \else
860         c=\BKM@RGBcolor,%
861     \fi
862     \ifnum\BKM@FLAGS>\z@
863         f=\BKM@FLAGS,%
864     \fi

```

```

865         t=\BKM@title
866     }%
867 \endgroup
868 \fi
869 }

870 \def\BKM@getx#1#2{%
871     \def\BKM@x@parent{#1}%
872     \def\BKM@x@level{#2}%
873 }

874 \def\BKM@toRGB#1 #2 #3\@nil{%
875     \let\BKM@RGBcolor\@empty
876     \BKM@toRGBComponent{#1}%
877     \BKM@toRGBComponent{#2}%
878     \BKM@toRGBComponent{#3}%
879 }

880 \def\BKM@toRGBComponent#1{%
881     \dimen@=#1pt\relax
882     \ifdim\dimen@>\z@
883         \ifdim\dimen@<\p@
884             \dimen@=255\dimen@
885             \advance\dimen@ by 32768sp\relax
886             \divide\dimen@ by 65536\relax
887             \dimen@ii=\dimen@
888             \divide\dimen@ii by 16\relax
889             \edef\BKM@RGBcolor{%
890                 \BKM@RGBcolor
891                 \BKM@toHexDigit\dimen@ii
892             }%
893             \dimen@ii=16\dimen@ii
894             \advance\dimen@-\dimen@ii
895             \edef\BKM@RGBcolor{%
896                 \BKM@RGBcolor
897                 \BKM@toHexDigit\dimen@
898             }%
899         \else
900             \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
901         \fi
902     \else
903         \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
904     \fi
905 }

906 \def\BKM@toHexDigit#1{%
907     \expandafter\ifcase\expandafter\@firstofone\expandafter{\number#1} %
908     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
909     8\or 9\or A\or B\or C\or D\or E\or F%
910     \fi
911 }

912 \begingroup
913 \catcode'\|=0 %
914 \catcode'\|=12 %
915 |gdef|BKM@vtex@title{%
916     |@onelevel@sanitize|BKM@title
917     |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
918     |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
919     |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
920     |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
921     |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
922     |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
923 }%
924 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
925     #1%
926     |ifx||#2||%

```

```

927     |else
928     (%)
929     |@ReturnAfterFi{%
930     |BKM@vtex@leftparen#2|@nil
931     }%
932     |fi
933 }%
934 |gdef|BKM@vtex@rightparen#1\|#2|@nil{%
935     #1%
936     |ifx||#2| |%
937     |else
938     )%
939     |@ReturnAfterFi{%
940     |BKM@vtex@rightparen#2|@nil
941     }%
942     |fi
943 }%
944 |gdef|BKM@vtex@zero#1\0#2|@nil{%
945     #1%
946     |ifx||#2| |%
947     |else
948     |noexpand|hv@pdf@char0%
949     |@ReturnAfterFi{%
950     |BKM@vtex@zero#2|@nil
951     }%
952     |fi
953 }%
954 |gdef|BKM@vtex@one#1\1#2|@nil{%
955     #1%
956     |ifx||#2| |%
957     |else
958     |noexpand|hv@pdf@char1%
959     |@ReturnAfterFi{%
960     |BKM@vtex@one#2|@nil
961     }%
962     |fi
963 }%
964 |gdef|BKM@vtex@two#1\2#2|@nil{%
965     #1%
966     |ifx||#2| |%
967     |else
968     |noexpand|hv@pdf@char2%
969     |@ReturnAfterFi{%
970     |BKM@vtex@two#2|@nil
971     }%
972     |fi
973 }%
974 |gdef|BKM@vtex@three#1\3#2|@nil{%
975     #1%
976     |ifx||#2| |%
977     |else
978     |noexpand|hv@pdf@char3%
979     |@ReturnAfterFi{%
980     |BKM@vtex@three#2|@nil
981     }%
982     |fi
983 }%
984 |endgroup
985 \long\def\@ReturnafterFi#1\fi{\fi#1}
986 </vtex>

```

### 3.4 Driver for pdf<sub>T</sub>E<sub>X</sub>

```

987 <*pdfTeX>
988 \NeedsTeXFormat{LaTeX2e}
989 \ProvidesFile{bkm-pdfTeX.def}%
990 [2008/09/13 v1.4 bookmark driver for pdfTeX (H0)]%
991 \def\BKM@D0@entry#1#2{%
992   \begingroup
993     \setkeys{BKM@D0}{#1}%
994     \def\BKM@D0@title{#2}%
995     \BKM@UnescapeHex\BKM@D0@title
996     \expandafter\expandafter\expandafter\BKM@getx
997       \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
998     \let\BKM@attr\@empty
999     \ifx\BKM@D0@flags\@empty
1000     \else
1001       \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1002     \fi
1003     \ifx\BKM@D0@color\@empty
1004     \else
1005       \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1006     \fi
1007     \ifx\BKM@attr\@empty
1008     \else
1009       \edef\BKM@attr{attr{\BKM@attr}}%
1010     \fi
1011     \let\BKM@action\@empty
1012     \ifx\BKM@D0@goto\@empty
1013       \ifx\BKM@D0@dest\@empty
1014         \ifx\BKM@D0@named\@empty
1015           \ifx\BKM@D0@rawaction\@empty
1016             \ifx\BKM@D0@uri\@empty
1017               \ifx\BKM@D0@page\@empty
1018                 \PackageError{bookmark}{Missing action}\@ehc
1019                 \edef\BKM@action{goto page1{/Fit}}%
1020               \else
1021                 \ifx\BKM@D0@view\@empty
1022                   \def\BKM@D0@view{Fit}%
1023                 \fi
1024                 \edef\BKM@action{goto page\BKM@D0@page{/ \BKM@D0@view}}%
1025               \fi
1026             \else
1027               \BKM@UnescapeHex\BKM@D0@uri
1028               \BKM@EscapeString\BKM@D0@uri
1029               \edef\BKM@action{user{<</S/URI/URI(\BKM@D0@uri)>>}}%
1030             \fi
1031           \else
1032             \BKM@UnescapeHex\BKM@D0@rawaction
1033             \edef\BKM@action{%
1034               user{%
1035                 <<%
1036                   \BKM@D0@rawaction
1037                 >>%
1038               }%
1039             }%
1040           \fi
1041         \else
1042           \BKM@EscapeName\BKM@D0@named
1043           \edef\BKM@action{%
1044             user{<</S/Named/N/\BKM@D0@named>>}}%
1045           }%
1046         \fi
1047       \else
1048         \BKM@UnescapeHex\BKM@D0@dest

```

```

1049      \BKM@DefGotoNameAction\BKM@action\BKM@DO@dest
1050      \fi
1051      \else
1052      \ifx\BKM@DO@dest\@empty
1053      \ifx\BKM@DO@page\@empty
1054      \def\BKM@DO@page{0}%
1055      \else
1056      \BKM@CalcExpr\BKM@DO@page\BKM@DO@page-1%
1057      \fi
1058      \ifx\BKM@DO@view\@empty
1059      \def\BKM@DO@view{Fit}%
1060      \fi
1061      \edef\BKM@action{/D[\BKM@DO@page/\BKM@DO@view]}%
1062      \else
1063      \BKM@UnescapeHex\BKM@DO@dest
1064      \BKM@EscapeString\BKM@DO@dest
1065      \edef\BKM@action{/D(\BKM@DO@dest)}%
1066      \fi
1067      \BKM@UnescapeHex\BKM@DO@goto
1068      \BKM@EscapeString\BKM@DO@goto
1069      \edef\BKM@action{%
1070      user{%
1071      <<%
1072      /S/GoToR%
1073      /F(\BKM@DO@goto)%
1074      \BKM@action
1075      >>%
1076      }%
1077      }%
1078      \fi
1079      \pdfoutline\BKM@attr\BKM@action
1080      count\ifBKM@DO@open\else-\fi\BKM@x@childs
1081      {\BKM@DO@title}%
1082      \endgroup
1083      }

```

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

```

1084 \def\BKM@DefGotoNameAction#1#2{%
1085   \BKM@EscapeString\BKM@DO@dest
1086   \edef#1{goto name{#2}}%
1087 }
1088 </pdfTeX>

```

## 3.5 Drivers with pdfmark specials

### 3.5.1 Driver dvips

```

1089 <dvips>
1090 \NeedsTeXFormat{LaTeX2e}
1091 \ProvidesFile{bkm-dvips.def}%
1092 [2008/09/13 v1.4 bookmark driver for dvips (HO)]%
1093 \def\BKM@PSHeaderFile#1{%
1094   \special{header=#1}%
1095 }
1096 </dvips>

```

### 3.5.2 Driver dvipsone

```

1097 <dvipsone>
1098 \NeedsTeXFormat{LaTeX2e}
1099 \ProvidesFile{bkm-dvipsone.def}%
1100 [2008/09/13 v1.4 bookmark driver for dvipsone (HO)]%

```



```

1101 \def\BKM@PSHeaderFile#1{%
1102   \special{header=#1}%
1103 }
1104 </dvipsone>

```

### 3.5.3 Driver textures

```

1105 <*textures>
1106 \NeedsTeXFormat{LaTeX2e}
1107 \ProvidesFile{bkm-textures.def}%
1108   [2008/09/13 v1.4 bookmark driver for textures (HO)]%
1109 \def\BKM@PSHeaderFile#1{%
1110   \special{prePostScriptfile #1}%
1111 }
1112 </textures>

```

### 3.5.4 Common part

```

1113 <*pdfmark>
1114 \def\BKM@filename{\jobname.out.ps}
1115 \BKM@PSHeaderFile\BKM@filename
1116 \AtEndDocument{\BKM@pdfmark@out}
1117 \def\BKM@pdfmark@out{%
1118   \if@filesw
1119     \newwrite\BKM@file
1120     \immediate\openout\BKM@file=\BKM@filename\relax
1121     \BKM@write{\@percentchar!}%
1122     \BKM@write{/pdfmark where{pop}}%
1123     \BKM@write{%
1124       {%
1125         /globaldict where{pop globaldict}{userdict}ifelse%
1126         /pdfmark/cleartomark load put%
1127       }%
1128     }%
1129     \BKM@write{ifelse}%
1130   \else
1131     \let\BKM@write\@gobble
1132     \let\BKM@DO@entry\@gobbletwo
1133   \fi
1134 }
1135 \def\BKM@write#1{%
1136   \immediate\write\BKM@file
1137 }

```

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`.

```

1138 \def\BKM@DO@entry#1#2{%
1139   \begingroup
1140     \setkeys{BKM@DO}{#1}%
1141     \def\BKM@DO@title{#2}%
1142     \BKM@UnescapeHex\BKM@DO@title
1143     \expandafter\expandafter\expandafter\BKM@getx
1144       \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1145     \let\BKM@attr\@empty
1146     \ifx\BKM@DO@flags\@empty
1147       \else
1148         \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1149       \fi
1150     \ifx\BKM@DO@color\@empty
1151       \else
1152         \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1153       \fi
1154     \let\BKM@action\@empty

```

```

1155 \ifx\BKM@D0@gotor\@empty
1156 \ifx\BKM@D0@dest\@empty
1157 \ifx\BKM@D0@named\@empty
1158 \ifx\BKM@D0@rawaction\@empty
1159 \ifx\BKM@D0@uri\@empty
1160 \ifx\BKM@D0@page\@empty
1161 \PackageError{bookmark}{Missing action}\@ehc
1162 \edef\BKM@action{%
1163 /Action/GoTo%
1164 /Page 1%
1165 /View[/Fit]%
1166 }%
1167 \else
1168 \ifx\BKM@D0@view\@empty
1169 \def\BKM@D0@view{Fit}%
1170 \fi
1171 \edef\BKM@action{%
1172 /Action/GoTo%
1173 /Page \BKM@D0@page
1174 /View[/\BKM@D0@view]%
1175 }%
1176 \fi
1177 \else
1178 \BKM@UnescapeHex\BKM@D0@uri
1179 \BKM@EscapeString\BKM@D0@uri
1180 \edef\BKM@action{%
1181 /Action<<%
1182 /Subtype/URI%
1183 /URI(\BKM@D0@uri)%
1184 >>%
1185 }%
1186 \fi
1187 \else
1188 \BKM@UnescapeHex\BKM@D0@rawaction
1189 \edef\BKM@action{%
1190 /Action<<%
1191 \BKM@D0@rawaction
1192 >>%
1193 }%
1194 \fi
1195 \else
1196 \BKM@EscapeName\BKM@D0@named
1197 \edef\BKM@action{%
1198 /Action<<%
1199 /Subtype/Named%
1200 /N/\BKM@D0@named
1201 >>%
1202 }%
1203 \fi
1204 \else
1205 \BKM@UnescapeHex\BKM@D0@dest
1206 \BKM@EscapeString\BKM@D0@dest
1207 \edef\BKM@action{%
1208 /Action/GoTo%
1209 /Dest(\BKM@D0@dest)cvn%
1210 }%
1211 \fi
1212 \else
1213 \ifx\BKM@D0@dest\@empty
1214 \ifx\BKM@D0@page\@empty
1215 \def\BKM@D0@page{1}%
1216 \fi

```

```

1217     \ifx\BKM@DO@view\@empty
1218     \def\BKM@DO@view{Fit}%
1219     \fi
1220     \edef\BKM@action{%
1221       /Page \BKM@DO@page
1222       /View[/\BKM@DO@view]%
1223     }%
1224   \else
1225     \BKM@UnescapeHex\BKM@DO@dest
1226     \BKM@EscapeString\BKM@DO@dest
1227     \edef\BKM@action{%
1228       /Dest(\BKM@DO@dest)cvn%
1229     }%
1230   \fi
1231   \BKM@UnescapeHex\BKM@DO@goto
1232   \BKM@EscapeString\BKM@DO@goto
1233   \edef\BKM@action{%
1234     /Action/GoToR%
1235     /File(\BKM@DO@goto)%
1236     \BKM@action
1237   }%
1238 \fi
1239 \BKM@write{[]}%
1240 \BKM@write{/Title(\BKM@DO@title)}%
1241 \ifnum\BKM@x@chlds>\z@
1242   \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chlds}%
1243 \fi
1244 \ifx\BKM@attr\@empty
1245 \else
1246   \BKM@write{\BKM@attr}%
1247 \fi
1248 \BKM@write{\BKM@action}%
1249 \BKM@write{/OUT pdfmark}%
1250 \endgroup
1251 }
1252 </pdfmark>

```

### 3.6 Common part for pdftex and pdfmark

1253 <\*pdftex | pdfmark>

#### 3.6.1 Write auxiliary file

```

1254 \RequirePackage{auxhook}
1255 \AddLineBeginMainAux{%
1256   \string\providecommand\string\BKM@entry[2]{}%
1257 }
1258 \newcount\BKM@id
1259 \BKM@id=\z@
1260 \def\BKM@O{000}
1261 \newif\ifBKM@sw
1262 \newcommand*{\bookmark}[2][1]{%
1263   \if@filesw
1264     \begingroup
1265       \bookmarksetup{#1}%
1266       \ifBKM@keeplevel
1267       \else
1268         \xdef\BKM@currentlevel{\BKM@level}%
1269       \fi
1270       \edef\BKM@prev{\the\BKM@id}%
1271       \global\advance\BKM@id\@ne
1272       \BKM@swtrue

```

```

1273 \@whilesw\ifBKM@sw\fi{%
1274 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1275 \global\BKM@startatrootfalse
1276 \expandafter\xdef\csname BKM@the\BKM@id\endcsname{%
1277 0{\BKM@level}0%
1278 }%
1279 \BKM@swfalse
1280 \else
1281 \expandafter\expandafter\expandafter\BKM@getx
1282 \csname BKM@\BKM@prev\endcsname
1283 \ifnum\BKM@level>\BKM@x@level\relax
1284 \expandafter\xdef\csname BKM@the\BKM@id\endcsname{%
1285 {\BKM@prev}{\BKM@level}0%
1286 }%
1287 \ifnum\BKM@prev>\z@
1288 \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1289 \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1290 {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1291 }%
1292 \fi
1293 \BKM@swfalse
1294 \else
1295 \let\BKM@prev\BKM@x@parent
1296 \fi
1297 \fi
1298 }%
1299 \pdfstringdef\BKM@title{#2}%
1300 \edef\BKM@FLAGS{\BKM@PrintStyle}%
1301 \csname BKM@HypDestOptHook\endcsname
1302 \BKM@EscapeHex\BKM@dest
1303 \BKM@EscapeHex\BKM@uri
1304 \BKM@EscapeHex\BKM@goto
1305 \BKM@EscapeHex\BKM@rawaction
1306 \BKM@EscapeHex\BKM@title
1307 \immediate\write\@mainaux{%
1308 \string\BKM@entry{%
1309 id=\number\BKM@id
1310 \ifBKM@open
1311 \ifnum\BKM@level<\BKM@openlevel
1312 ,open%
1313 \fi
1314 \fi
1315 \BKM@auxentry{dest}%
1316 \BKM@auxentry{named}%
1317 \BKM@auxentry{uri}%
1318 \BKM@auxentry{goto}%
1319 \BKM@auxentry{page}%
1320 \BKM@auxentry{view}%
1321 \BKM@auxentry{rawaction}%
1322 \BKM@auxentry{color}%
1323 \ifnum\BKM@FLAGS>\z@
1324 ,flags=\BKM@FLAGS
1325 \fi
1326 }{\BKM@title}%
1327 }%
1328 \endgroup
1329 \fi
1330 }
1331 \def\BKM@getx#1#2#3{%
1332 \def\BKM@x@parent{#1}%
1333 \def\BKM@x@level{#2}%
1334 \def\BKM@x@childs{#3}%

```

```

1335 }
1336 \def\BKM@auxentry#1{%
1337   \expandafter\ifx\csname BKM@#1\endcsname\@empty
1338   \else
1339     ,#1={\csname BKM@#1\endcsname}%
1340   \fi
1341 }

```

### 3.6.2 Read auxiliary data

```

1342 \SetupKeyvalOptions{family=BKM@D0,prefix=BKM@D0@}
1343 \DeclareStringOption[0]{id}
1344 \DeclareBoolOption{open}
1345 \DeclareStringOption{flags}
1346 \DeclareStringOption{color}
1347 \DeclareStringOption{dest}
1348 \DeclareStringOption{named}
1349 \DeclareStringOption{uri}
1350 \DeclareStringOption{goto}
1351 \DeclareStringOption{page}
1352 \DeclareStringOption{view}
1353 \DeclareStringOption{rawaction}

1354 \AtBeginDocument{%
1355   \let\BKM@entry\BKM@D0@entry
1356 }

1357 </pdfTeX | pdfmark>

```

## 3.7 Option atend

### 3.7.1 Hook

```

1358 <*package>
1359 \ifBKM@atend
1360 \else
\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
                  given.
1361   \newcommand{\BookmarkAtEnd}[1]{%
1362     \PackageWarning{bookmark}{%
1363       Ignored, because option ‘atend’ is missing%
1364     }%
1365   }%

1366   \expandafter\endinput
1367 \fi

\BookmarkAtEnd
1368 \newcommand*\{\BookmarkAtEnd}{%
1369   \g@addto@macro\BKM@EndHook
1370 }

1371 \let\BKM@EndHook\@empty
1372 </package>

```

### 3.7.2 Drivers using \AtEndDocument

\AtEndDocument can be used, if the implementation of \bookmark does not depend on \special:

- 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, thus \AtEndDocument works.

```

1373 <*pdfTeX | pdfmark>
1374 \ifBKM@atend
1375   \AtBeginDocument{%
1376     \AtEndDocument{%
1377       \clearpage
1378       \BKM@EndHook
1379     }%
1380   }%
1381 \fi
1382 </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  $\text{\LaTeX}$  runs are necessary.

```

1383 <*dvipdfm | vtex>
1384 \ifBKM@atend
1385   \RequirePackage{atendddvi}%
1386   \AtEndDvi{\BKM@EndHook}%
1387 \fi
1388 </dvipdfm | vtex>

```

## 4 Installation

### 4.1 Download

**Package.** 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.

**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/

```

---

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

### 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 `mktextlsr`.

### 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  $\text{\LaTeX}$ .** The `.dtx` chooses its action depending on the format:

**plain- $\text{\TeX}$ :** Run `docstrip` and extract the files.

**$\text{\LaTeX}$ :** Generate the documentation.

If you insist on using  $\text{\LaTeX}$  for `docstrip` (really, `docstrip` does not need  $\text{\LaTeX}$ ), 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 `pdf $\text{\LaTeX}$` :

```
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 `bookmarkstyle` 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  $\varepsilon$ -T<sub>E</sub>X.
- 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)

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