

# 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  $\text{\TeX}$  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  $\epsilon$ -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`

**goto:** 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:	goto + dest
GoToR:	goto + 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}[2007/09/25]
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  $\langle$ /example $\rangle$ 

```

## 3 Implementation

### 3.1 Package

```

97  $\langle$ *package $\rangle$ 
98 \NeedsTeXFormat{LaTeX2e}
99 \ProvidesPackage{bookmark}%
100 [2007/09/25 v1.2 PDF bookmarks (HO)]%

```

#### 3.1.1 Requirements

$\epsilon$ -**T****E****X**.

```

101 \newif\ifBKM@WithFlags
102 \begingroup\expandafter\expandafter\expandafter\endgroup
103 \expandafter\ifx\csname numexpr\endcsname\relax
104   \def\BKM@CalcExpr#1#2#3#4{%

```

```

105 \begingroup
106 \count@=#2\relax
107 \advance\count@ by#3#4\relax
108 \edef\x{\endgroup
109 \def\noexpand#1{\the\count@}%
110 }%
111 \x
112 }%
113 \BKM@WithFlagsfalse
114 \else
115 \def\BKM@CalcExpr#1#2#3#4{%
116 \edef#1{%
117 \the\numexpr#2#3#4\relax
118 }%
119 }%
120 \BKM@WithFlagstrue
121 \fi

```

### Escape features of pdfTeX.

```

122 \RequirePackage{pdfescape}[2007/03/20]
123 \def\BKM@EscapeName#1{%
124 \ifx#1\@empty
125 \else
126 \EdefEscapeName#1#1%
127 \fi
128 }%
129 \def\BKM@EscapeString#1{%
130 \ifx#1\@empty
131 \else
132 \EdefEscapeString#1#1%
133 \fi
134 }%
135 \def\BKM@EscapeHex#1{%
136 \ifx#1\@empty
137 \else
138 \EdefEscapeHex#1#1%
139 \fi
140 }%
141 \def\BKM@UnescapeHex#1{%
142 \EdefUnescapeHex#1#1%
143 }%

```

### Packages.

```

144 \RequirePackage{ifpdf}
145 \RequirePackage{ifxetex}
146 \RequirePackage{ifvtex}
147 \RequirePackage{hyperref}
148 \RequirePackage{auxhook}
149 \RequirePackage{kvoptions}
150 \RequirePackage{hycolor}
151 \ifBKM@WithFlags
152 \RequirePackage{flags}%
153 \fi

```

#### 3.1.2 Package options

```

154 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
155 \newcommand*{\bookmarksetup}{\setkeys{BKM}}
156 \DeclareBoolOption[\ifHy@bookmarksopen true\else false\fi]{open}
157 \DeclareStringOption[\maxdimen]{openlevel}
158 \edef\BKM@openlevel{\number\@bookmarksopenlevel}

```



```

159 %\DeclareStringOption[\c@tocdepth]{depth}
160 \begingroup\expandafter\expandafter\expandafter\endgroup
161 \expandafter\ifx\c@name Hy@bookmarksdepth\endcsname\relax
162 \def\BKM@depth{\c@tocdepth}%
163 \else
164 \let\BKM@depth\Hy@bookmarksdepth
165 \fi
166 \define@key{BKM}{depth}[]{}%
167 \edef\BKM@param{#1}%
168 \ifx\BKM@param\@empty
169 \def\BKM@depth{\c@tocdepth}%
170 \else
171 \ifundefined{toclevel@\BKM@param}{%
172 \onelevel@sanitize\BKM@param
173 \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
174 \ifcase 0\expandafter\ifx\BKM@temp-1\fi
175 \expandafter\ifnum\expandafter'\BKM@temp>47 %
176 \expandafter\ifnum\expandafter'\BKM@temp<58 %
177 1%
178 \fi
179 \fi
180 \relax
181 \PackageWarning{bookmark}{%
182 Unknown document division name (\BKM@param)%
183 }%
184 \else
185 \BKM@SetDepth\BKM@param
186 \fi
187 }{}%
188 \BKM@SetDepth{\c@name toclevel@\BKM@param\endcsname}%
189 }%
190 \fi
191 }
192 \def\BKM@SetDepth#1{%
193 \begingroup
194 \setbox\z@=\hbox{%
195 \count@=#1\relax
196 \expandafter
197 }%
198 \expandafter\endgroup
199 \expandafter\def\expandafter\BKM@depth\expandafter{\the\count@}%
200 }
201 \DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
202 \DeclareBoolOption{keeplevel}
203 \DeclareBoolOption{startatroot}
204 \define@key{BKM}{rellevel}{}%
205 \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
206 }
207 \def\BKM@currentlevel{0}

```

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

```

208 \DeclareBoolOption[%
209 \ifHy@bookmarksnumbered true\else false\fi
210 ]{numbered}
211 \g@addto@macro\BKM@numberedtrue{%
212 \let\ifHy@bookmarksnumbered\iftrue
213 }
214 \g@addto@macro\BKM@numberedfalse{%
215 \let\ifHy@bookmarksnumbered\iffalse
216 }
217 \g@addto@macro\Hy@bookmarksnumberedtrue{%
218 \let\ifBKM@numbered\iftrue
219 }

```

```

220 \g@addto@macro\Hy@bookmarksnumberedfalse{%
221   \let\ifBKM@numbered\iffalse
222 }

```

### Redefinitions hyperref's options

```

223 \def\BKM@PatchHyperrefOption#1{%
224   \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
225 }
226 \def\BKM@@PatchHyperrefOption#1{%
227   \expandafter\BKM@@@PatchHyperrefOption#1{##1}\BKM@nil#1%
228 }
229 \def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
230   \def#2##1{%
231     #1%
232     \bookmarksetup{#3={##1}}%
233   }%
234 }
235 \BKM@PatchHyperrefOption{bookmarksopen}{open}
236 \BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
237 \BKM@PatchHyperrefOption{bookmarksdepth}{depth}

```

### Style options.

```

238 \ifBKM@WithFlags
239   \expandafter\@firstoftwo
240 \else
241   \expandafter\@secondoftwo
242 \fi
243 {%
244   \resetflags{BKM@style}%
245   \define@key{BKM}{italic}[true]{%
246     \expandafter\ifx\csname if#1\endcsname\iftrue
247       \setflag{BKM@style}{1}%
248     \else
249       \clearflag{BKM@style}{1}%
250     \fi
251   }%
252   \define@key{BKM}{bold}[true]{%
253     \expandafter\ifx\csname if#1\endcsname\iftrue
254       \setflag{BKM@style}{2}%
255     \else
256       \clearflag{BKM@style}{2}%
257     \fi
258   }%
259   \def\BKM@PrintStyle{%
260     \printflags{BKM@style}%
261   }%
262 }{%
263   \def\BKM@temp#1{%
264     \define@key{BKM}{#1}[true]{%
265       \PackageWarning{bookmark}{%
266         Option ‘#1’ is not available\MessageBreak
267         because of missing e-TeX%
268       }%
269     }%
270   }%
271   \BKM@temp{italic}%
272   \BKM@temp{bold}%
273   \def\BKM@PrintStyle{0}%
274 }

```

### Options for color.

```

275 \define@key{BKM}{color}{%

```

```

276 \HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}%
277 }
278 \let\BKM@color\@empty

```

### 3.1.3 Action options

```

279 \DeclareStringOption{dest}
280 \DeclareStringOption{named}
281 \DeclareStringOption{uri}
282 \DeclareStringOption{gotor}
283 \DeclareStringOption{rawaction}

284 \define@key{BKM}{page}{%
285   \def\BKM@page{#1}%
286   \ifx\BKM@page\@empty
287     \else
288       \edef\BKM@page{\number\BKM@page}%
289       \ifnum\BKM@page>\z@
290         \else
291           \PackageError{bookmark}{Page must be positive}\@ehc
292         \def\BKM@page{1}%
293       \fi
294     \fi
295 }
296 \let\BKM@page\@empty

297 \define@key{BKM}{view}{%
298   \BKM@CheckView{#1}%
299 }
300 \let\BKM@view\@empty
301 \def\BKM@CheckView#1{%
302   \BKM@CheckViewType#1 \@nil
303 }
304 \def\BKM@CheckViewType#1 #2\@nil{%
305   \def\BKM@type{#1}%
306   \@onelevel@sanitize\BKM@type
307   \BKM@TestViewType{Fit}{}%
308   \BKM@TestViewType{FitB}{}%
309   \BKM@TestViewType{FitH}{%
310     \BKM@CheckParam#2 \@nil{top}%
311   }%
312   \BKM@TestViewType{FitBH}{%
313     \BKM@CheckParam#2 \@nil{top}%
314   }%
315   \BKM@TestViewType{FitV}{%
316     \BKM@CheckParam#2 \@nil{bottom}%
317   }%
318   \BKM@TestViewType{FitBV}{%
319     \BKM@CheckParam#2 \@nil{bottom}%
320   }%
321   \BKM@TestViewType{FitR}{%
322     \BKM@CheckRect{#2}{ }%
323   }%
324   \BKM@TestViewType{XYZ}{%
325     \BKM@CheckXYZ{#2}{ }%
326   }%
327   \@car{%
328     \PackageError{pdfbookmark}{%
329       Unknown view type ‘\BKM@type’,\MessageBreak
330       using ‘FitH’ instead%
331     }\@ehc
332   \def\BKM@view{FitH}%
333 }%
334 \@nil

```

```

335 }
336 \def\BKM@TestViewType#1{%
337   \def\BKM@temp{#1}%
338   \@onelevel@sanitize\BKM@temp
339   \ifx\BKM@type\BKM@temp
340     \let\BKM@view\BKM@temp
341     \expandafter\@car
342   \else
343     \expandafter\@gobble
344   \fi
345 }
346 \def\BKM@CheckParam#1 #2\@nil#3{%
347   \def\BKM@param{#1}%
348   \ifx\BKM@param\@empty
349     \PackageWarning{bookmark}{%
350       Missing parameter (#3) for '\BKM@type',\MessageBreak
351       using 0%
352     }%
353     \def\BKM@param{0}%
354   \else
355     \BKM@CalcParam
356   \fi
357   \edef\BKM@view{\BKM@view\space\BKM@param}%
358 }
359 \def\BKM@CheckRect#1#2{%
360   \BKM@@CheckRect#1#2#2#2\@nil
361 }
362 \def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
363   \def\BKM@temp{0}%
364   \def\BKM@param{#1}%
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   \def\BKM@param{#2}%
373   \ifx\BKM@param\@empty
374     \def\BKM@param{0}%
375     \def\BKM@temp{1}%
376   \else
377     \BKM@CalcParam
378   \fi
379   \edef\BKM@view{\BKM@view\space\BKM@param}%
380   \def\BKM@param{#3}%
381   \ifx\BKM@param\@empty
382     \def\BKM@param{0}%
383     \def\BKM@temp{1}%
384   \else
385     \BKM@CalcParam
386   \fi
387   \edef\BKM@view{\BKM@view\space\BKM@param}%
388   \def\BKM@param{#4}%
389   \ifx\BKM@param\@empty
390     \def\BKM@param{0}%
391     \def\BKM@temp{1}%
392   \else
393     \BKM@CalcParam
394   \fi
395   \edef\BKM@view{\BKM@view\space\BKM@param}%
396   \ifnum\BKM@temp>\z@

```

```

397 \PackageWarning{bookmark}{Missing parameters for '\BKM@type'}%
398 \fi
399 }
400 \def\BKM@CheckXYZ#1#2{%
401 \BKM@@CheckXYZ#1#2#2#2\@nil
402 }
403 \def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%
404 \def\BKM@param{#1}%
405 \let\BKM@temp\BKM@param
406 \@onelevel@sanitize\BKM@temp
407 \ifx\BKM@param\@empty
408 \let\BKM@param\BKM@null
409 \else
410 \ifx\BKM@temp\BKM@null
411 \else
412 \BKM@CalcParam
413 \fi
414 \fi
415 \edef\BKM@view{\BKM@view\space\BKM@param}%
416 \def\BKM@param{#2}%
417 \let\BKM@temp\BKM@param
418 \@onelevel@sanitize\BKM@temp
419 \ifx\BKM@param\@empty
420 \let\BKM@param\BKM@null
421 \else
422 \ifx\BKM@temp\BKM@null
423 \else
424 \BKM@CalcParam
425 \fi
426 \fi
427 \edef\BKM@view{\BKM@view\space\BKM@param}%
428 \def\BKM@param{#3}%
429 \ifx\BKM@param\@empty
430 \let\BKM@param\BKM@null
431 \fi
432 \edef\BKM@view{\BKM@view\space\BKM@param}%
433 }
434 \def\BKM@null{null}
435 \@onelevel@sanitize\BKM@null

436 \def\BKM@CalcParam{%
437 \begingroup
438 \let\calc\@firstofone
439 \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
440 }
441 \def\BKM@@CalcParam#1#2#3\@nil{%
442 \ifx\calc#1%
443 \@ifundefined{calc@assign@dimen}{%
444 \setlength{\dimen@}{\dimexpr#2\relax}%
445 }{%
446 \setlength{\dimen@}{#2}%
447 }%
448 \dimen@.99626\dimen@
449 \edef\BKM@param{\strip@pt\dimen@}%
450 \expandafter\endgroup
451 \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
452 \else
453 \endgroup
454 \fi
455 }

```

### 3.1.4 Option `atend`

```

456 \DeclareBoolOption{atend}

```

```

457 \def\BKM@DisableOptions{%
458   \DisableKeyvalOption{BKM}{attend}%
459 }

```

### 3.1.5 Driver setup and loading

#### Driver detection.

```

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

```

#### Process options.

```

502 \ProcessKeyvalOptions*
503 \BKM@DisableOptions

```

#### Driver validation and loading.

```

504 \newif\ifBKM@DvipdfmxOutlineOpen
505 \begingroup\expandafter\expandafter\expandafter\endgroup
506 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
507 \else
508   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
509     \BKM@DvipdfmxOutlineOpentrue
510   \fi

```

```

511 \fi
512 \def\BKM@temp{dvipdfmx}%
513 \ifx\BKM@temp\BKM@driver
514   \def\BKM@driver{dvipdfm}%
515 \fi
516 \def\BKM@temp{pdftex}%
517 \ifpdf
518   \ifx\BKM@temp\BKM@driver
519   \else
520     \PackageWarningNoLine{bookmark}{%
521       Wrong driver '\BKM@driver', using 'pdftex' instead%
522     }%
523     \let\BKM@driver\BKM@temp
524   \fi
525 \else
526   \ifx\BKM@temp\BKM@driver
527     \PackageError{bookmark}{%
528       Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
529       Package loading is aborted%
530     }\@ehc
531     \expandafter\expandafter\expandafter\endinput
532   \fi
533 \def\BKM@temp{dvipdfm}%
534 \ifxetex
535   \ifx\BKM@temp\BKM@driver
536   \else
537     \PackageWarningNoLine{bookmark}{%
538       Wrong driver '\BKM@driver',\MessageBreak
539       using 'dvipdfm' for XeTeX instead%
540     }%
541     \let\BKM@driver\BKM@temp
542   \fi
543 \else
544   \def\BKM@temp{vtex}%
545   \ifvtex
546     \ifx\BKM@temp\BKM@driver
547     \else
548       \PackageWarningNoLine{bookmark}{%
549         Wrong driver '\BKM@driver',\MessageBreak
550         using 'vtex' for VTeX instead%
551       }%
552       \let\BKM@driver\BKM@temp
553     \fi
554   \else
555     \ifx\BKM@temp\BKM@driver
556     \PackageError{bookmark}{%
557       Wrong driver, VTeX is not running in PDF mode.\MessageBreak
558       Package loading is aborted%
559     }\@ehc
560     \expandafter\expandafter\expandafter\endinput
561   \fi
562 \fi
563 \fi
564 \fi
565 \InputIfFileExists{bkm-\BKM@driver.def}{\fi}{%
566   \PackageError{bookmark}{%
567     Unsupported driver '\BKM@driver'.\MessageBreak
568     Package loading is aborted%
569   }\@ehc
570 \endinput
571 }

```

### 3.1.6 Compatibility for hyperref

```

572 \renewcommand*{\pdfbookmark}[3][0]{%
573   \bookmark[level=#1,dest={#3.#1}]{#2}%
574   \hyper@anchorstart{#3.#1}\hyper@anchorend
575 }
576 \renewcommand*{\currentpdfbookmark}{%
577   \pdfbookmark[\BKM@currentlevel]%
578 }
579 \renewcommand*{\subpdfbookmark}{%
580   \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%
581   \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%
582 }
583 \renewcommand*{\belowpdfbookmark}[2]{%
584   \xdef\BKM@gtemp{\number\BKM@currentlevel}%
585   \subpdfbookmark{#1}{#2}%
586   \global\let\BKM@currentlevel\BKM@gtemp
587 }

    section number, text, label, level, file
588 \renewcommand*{\Hy@writebookmark}[5]{%
589   \ifnum#4>\BKM@depth\relax
590   \else
591     \def\BKM@type{#5}%
592     \ifx\BKM@type\Hy@bookmarkstype
593       \begingroup
594         \ifBKM@numbered
595           \let\numberline\Hy@numberline
596           \let\partnumberline\Hy@numberline
597           \let\chapternumberline\Hy@numberline
598         \else
599           \let\numberline\@gobble
600           \let\partnumberline\@gobble
601           \let\chapternumberline\@gobble
602         \fi
603         \bookmark[level=#4,dest={#3}]{#2}%
604       \endgroup
605     \fi
606   \fi
607 }
608 \let\ReadBookmarks\relax
609 </package>

```

### 3.2 Driver for dvipdfm

```

610 <*dvipdfm>
611 \NeedsTeXFormat{LaTeX2e}
612 \ProvidesFile{bkm-dvipdfm.def}%
613   [2007/09/25 v1.2 bookmark driver for dvipdfm (HO)]%
614 \newcount\BKM@id
615 \BKM@id=\z@
616 \def\BKM@O{000}
617 \newif\ifBKM@sw
618 \newcommand*{\bookmark}[2][ ]{%
619   \if@filesw
620     \begingroup
621       \bookmarksetup{#1}%
622       \ifBKM@keeplevel
623       \else
624         \xdef\BKM@currentlevel{\BKM@level}%
625       \fi
626       \edef\BKM@prev{\the\BKM@id}%

```



```

627 \global\advance\BKM@id\@ne
628 \BKM@swtrue
629 \@whilesw\ifBKM@sw\fi{%
630 \def\BKM@abslevel{1}%
631 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
632 \global\BKM@startatrootfalse
633 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
634 0{\BKM@level}\BKM@abslevel
635 }%
636 \BKM@swfalse
637 \else
638 \expandafter\expandafter\expandafter\BKM@getx
639 \csname BKM@\BKM@prev\endcsname
640 \ifnum\BKM@level>\BKM@x@level\relax
641 \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
642 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
643 {\BKM@prev}{\BKM@level}\BKM@abslevel
644 }%
645 \BKM@swfalse
646 \else
647 \let\BKM@prev\BKM@x@parent
648 \fi
649 \fi
650 }%
651 \pdfstringdef\BKM@title{#2}%
652 \edef\BKM@FLAGS{\BKM@PrintStyle}%
653 \let\BKM@action\@empty
654 \ifx\BKM@goto\@empty
655 \ifx\BKM@dest\@empty
656 \ifx\BKM@named\@empty
657 \ifx\BKM@rawaction\@empty
658 \ifx\BKM@uri\@empty
659 \ifx\BKM@page\@empty
660 \PackageError{bookmark}{Missing action}\@ehc
661 \edef\BKM@action{/Dest[@page1/Fit]}%
662 \else
663 \ifx\BKM@view\@empty
664 \def\BKM@view{Fit}%
665 \fi
666 \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]}%
667 \fi
668 \else
669 \BKM@EscapeString\BKM@uri
670 \edef\BKM@action{%
671 /A<<%
672 /S/URI%
673 /URI(\BKM@uri)%
674 >>%
675 }%
676 \fi
677 \else
678 \edef\BKM@action{/A<<\BKM@rawaction>>}%
679 \fi
680 \else
681 \BKM@EscapeName\BKM@named
682 \edef\BKM@action{%
683 /A<</S/Named/N/\BKM@named>>%
684 }%
685 \fi
686 \else
687 \BKM@EscapeString\BKM@dest
688 \edef\BKM@action{%

```

```

689         /A<<%
690         /S/GoTo%
691         /D(\BKM@dest)%
692     >>%
693 }%
694 \fi
695 \else
696     \ifx\BKM@dest\@empty
697     \ifx\BKM@page\@empty
698         \def\BKM@page{0}%
699     \else
700         \BKM@CalcExpr\BKM@page\BKM@page-1%
701     \fi
702     \ifx\BKM@view\@empty
703         \def\BKM@view{Fit}%
704     \fi
705     \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
706 \else
707     \BKM@EscapeString\BKM@dest
708     \edef\BKM@action{/D(\BKM@dest)}%
709 \fi
710 \BKM@EscapeString\BKM@gotor
711 \edef\BKM@action{%
712     /A<<%
713     /S/GoToR%
714     /F(\BKM@gotor)%
715     \BKM@action
716 >>%
717 }%
718 \fi
719 \special{pdf:%
720     out \ifBKM@DvipdfmxOutlineOpen
721     [%
722         \ifBKM@open
723             \ifnum\BKM@level<\BKM@openlevel
724             \else
725                 -%
726             \fi
727             \else
728                 -%
729             \fi
730         ] %
731     \fi
732     \BKM@abslevel
733 <<%
734     /Title(\BKM@title)%
735     \ifx\BKM@color\@empty
736     \else
737         /C[\BKM@color]%
738     \fi
739     \ifnum\BKM@FLAGS>\z@
740         /F \BKM@FLAGS
741     \fi
742     \BKM@action
743 >>%
744 }%
745 \endgroup
746 \fi
747 }

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

```

```

751 \def\BKM@x@abslevel{#3}%
752 }
753 </dvipdfm>

```

### 3.3 Driver for V<sub>T</sub>E<sub>X</sub>

```

754 <*vtex>
755 \NeedsTeXFormat{LaTeX2e}
756 \ProvidesFile{bkm-vtex.def}%
757 [2007/09/25 v1.2 bookmark driver for VTeX (HO)]%
758 \ifvtexpdf
759 \else
760 \PackageWarningNoLine{bookmark}{%
761 The VTeX driver only supports PDF mode%
762 }%
763 \fi
764 \newcount\BKM@id
765 \BKM@id=\z@
766 \def\BKM@O{00}
767 \newif\ifBKM@sw
768 \newcommand*{\bookmark}[2][ ]{%
769 \if@filesw
770 \begingroup
771 \bookmarksetup{#1}%
772 \ifBKM@keeplevel
773 \else
774 \xdef\BKM@currentlevel{\BKM@level}%
775 \fi
776 \edef\BKM@prev{\the\BKM@id}%
777 \global\advance\BKM@id\@ne
778 \BKM@swtrue
779 \@whiles\ifBKM@sw\fi{%
780 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
781 \global\BKM@startatrootfalse
782 \def\BKM@parent{0}%
783 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
784 0{\BKM@level}%
785 }%
786 \BKM@swfalse
787 \else
788 \expandafter\expandafter\expandafter\BKM@getx
789 \csname BKM@\BKM@prev\endcsname
790 \ifnum\BKM@level>\BKM@x@level\relax
791 \let\BKM@parent\BKM@prev
792 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
793 {\BKM@prev}{\BKM@level}%
794 }%
795 \BKM@swfalse
796 \else
797 \let\BKM@prev\BKM@x@parent
798 \fi
799 \fi
800 }%
801 \pdfstringdef\BKM@title{#2}%
802 \BKM@vtex@title
803 \edef\BKM@FLAGS{\BKM@PrintStyle}%
804 \let\BKM@action\@empty
805 \ifx\BKM@goto\@empty
806 \ifx\BKM@dest\@empty
807 \ifx\BKM@named\@empty
808 \ifx\BKM@rawaction\@empty

```

```

809         \ifx\BKM@uri\@empty
810         \ifx\BKM@page\@empty
811             \PackageError{bookmark}{Missing action}\@ehc
812             \def\BKM@action{!}%
813         \else
814             \edef\BKM@action{!\BKM@page}%
815         \fi
816     \else
817         \BKM@EscapeString\BKM@uri
818         \edef\BKM@action{%
819             <u=%
820             /S/URI%
821             /URI(\BKM@uri)%
822             >%
823             }%
824     \fi
825 \else
826     \edef\BKM@action{<u=\BKM@rawaction>}%
827 \fi
828 \else
829     \BKM@EscapeName\BKM@named
830     \edef\BKM@action{%
831         <u=%
832         /S/Named%
833         /N/\BKM@named
834         >%
835         }%
836 \fi
837 \else
838     \BKM@EscapeString\BKM@dest
839     \edef\BKM@action{\BKM@dest}%
840 \fi
841 \else
842     \ifx\BKM@dest\@empty
843     \ifx\BKM@page\@empty
844         \def\BKM@page{1}%
845     \fi
846     \ifx\BKM@view\@empty
847         \def\BKM@view{Fit}%
848     \fi
849     \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
850 \else
851     \BKM@EscapeString\BKM@dest
852     \edef\BKM@action{/D(\BKM@dest)}%
853 \fi
854 \BKM@EscapeString\BKM@gotor
855 \edef\BKM@action{%
856     <u=%
857     /S/GoToR%
858     /F(\BKM@gotor)%
859     \BKM@action
860     >>%
861     }%
862 \fi
863 \ifx\BKM@color\@empty
864     \let\BKM@RGBcolor\@empty
865 \else
866     \expandafter\BKM@toRGB\BKM@color\@nil
867 \fi
868 \special{%
869     !outline \BKM@action;%
870     p=\BKM@parent,%

```

```

871         i=\number\BKM@id,%
872         s=%
873         \ifBKM@open
874             \ifnum\BKM@level<\BKM@openlevel
875                 o%
876             \else
877                 c%
878             \fi
879         \else
880             c%
881         \fi,%
882         \ifx\BKM@RGBcolor\@empty
883         \else
884             c=\BKM@RGBcolor,%
885         \fi
886         \ifnum\BKM@FLAGS>\z@
887             f=\BKM@FLAGS,%
888         \fi
889         t=\BKM@title
890     }%
891 \endgroup
892 \fi
893 }

894 \def\BKM@getx#1#2{%
895     \def\BKM@x@parent{#1}%
896     \def\BKM@x@level{#2}%
897 }

898 \def\BKM@toRGB#1 #2 #3\@nil{%
899     \let\BKM@RGBcolor\@empty
900     \BKM@toRGBComponent{#1}%
901     \BKM@toRGBComponent{#2}%
902     \BKM@toRGBComponent{#3}%
903 }
904 \def\BKM@toRGBComponent#1{%
905     \dimen@=#1pt\relax
906     \ifdim\dimen@>\z@
907         \ifdim\dimen@<\p@
908             \dimen@=255\dimen@
909             \advance\dimen@ by 32768sp\relax
910             \divide\dimen@ by 65536\relax
911             \dimen@ii=\dimen@
912             \divide\dimen@ii by 16\relax
913             \edef\BKM@RGBcolor{%
914                 \BKM@RGBcolor
915                 \BKM@toHexDigit\dimen@ii
916             }%
917             \dimen@ii=16\dimen@ii
918             \advance\dimen@-\dimen@ii
919             \edef\BKM@RGBcolor{%
920                 \BKM@RGBcolor
921                 \BKM@toHexDigit\dimen@
922             }%
923         \else
924             \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
925         \fi
926     \else
927         \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
928     \fi
929 }
930 \def\BKM@toHexDigit#1{%
931     \expandafter\ifcase\expandafter\@firstofone\expandafter{\number#1} %
932     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or

```

```

933      8\or 9\or A\or B\or C\or D\or E\or F%
934 \fi
935 }

936 \begingroup
937 \catcode'\|=0 %
938 \catcode'\|=12 %
939 |gdef|BKM@vtex@title{%
940   |@onelevel@sanitize|BKM@title
941   |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
942   |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
943   |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
944   |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
945   |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
946   |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
947 }%
948 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
949   #1%
950   |ifx||#2||%
951   |else
952     (%
953     |@ReturnAfterFi{%
954       |BKM@vtex@leftparen#2|@nil
955     }%
956   |fi
957 }%
958 |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
959   #1%
960   |ifx||#2||%
961   |else
962     )%
963     |@ReturnAfterFi{%
964       |BKM@vtex@rightparen#2|@nil
965     }%
966   |fi
967 }%
968 |gdef|BKM@vtex@zero#1\0#2|@nil{%
969   #1%
970   |ifx||#2||%
971   |else
972     |noexpand|hv@pdf@char0%
973     |@ReturnAfterFi{%
974       |BKM@vtex@zero#2|@nil
975     }%
976   |fi
977 }%
978 |gdef|BKM@vtex@one#1\1#2|@nil{%
979   #1%
980   |ifx||#2||%
981   |else
982     |noexpand|hv@pdf@char1%
983     |@ReturnAfterFi{%
984       |BKM@vtex@one#2|@nil
985     }%
986   |fi
987 }%
988 |gdef|BKM@vtex@two#1\2#2|@nil{%
989   #1%
990   |ifx||#2||%
991   |else
992     |noexpand|hv@pdf@char2%
993     |@ReturnAfterFi{%
994       |BKM@vtex@two#2|@nil

```

```

995     }%
996   |fi
997 }%
998 |gdef|BKM@vtex@three#1\3#2|@nil{%
999   #1%
1000   |ifx||#2||%
1001   |else
1002     |noexpand|hv@pdf@char3%
1003     |@ReturnAfterFi{%
1004       |BKM@vtex@three#2|@nil
1005     }%
1006   |fi
1007 }%
1008 |endgroup
1009 \long\def\@ReturnafterFi#1\fi{\fi#1}
1010 </vtex>

```

### 3.4 Driver for pdfTeX

```

1011 <*pdfTeX>
1012 \NeedsTeXFormat{LaTeX2e}
1013 \ProvidesFile{bkm-pdfTeX.def}%
1014 [2007/09/25 v1.2 bookmark driver for pdfTeX (H0)]%
1015 \def\BKM@D0@entry#1#2{%
1016   \begingroup
1017     \setkeys{BKM@D0}{#1}%
1018     \def\BKM@D0@title{#2}%
1019     \BKM@UnescapeHex\BKM@D0@title
1020     \expandafter\expandafter\expandafter\BKM@getx
1021     \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1022     \let\BKM@attr\@empty
1023     \ifx\BKM@D0@flags\@empty
1024     \else
1025       \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1026     \fi
1027     \ifx\BKM@D0@color\@empty
1028     \else
1029       \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1030     \fi
1031     \ifx\BKM@attr\@empty
1032     \else
1033       \edef\BKM@attr{attr{\BKM@attr}}%
1034     \fi
1035     \let\BKM@action\@empty
1036     \ifx\BKM@D0@goto\@empty
1037     \ifx\BKM@D0@dest\@empty
1038     \ifx\BKM@D0@named\@empty
1039     \ifx\BKM@D0@rawaction\@empty
1040     \ifx\BKM@D0@uri\@empty
1041     \ifx\BKM@D0@page\@empty
1042       \PackageError{bookmark}{Missing action}\@ehc
1043       \edef\BKM@action{goto page1{/Fit}}%
1044     \else
1045       \ifx\BKM@D0@view\@empty
1046         \def\BKM@D0@view{Fit}%
1047       \fi
1048       \edef\BKM@action{goto page\BKM@D0@page{/ \BKM@D0@view}}%
1049     \fi
1050   \else
1051     \BKM@UnescapeHex\BKM@D0@uri
1052     \BKM@EscapeString\BKM@D0@uri
1053     \edef\BKM@action{user{<</S/URI/URI(\BKM@D0@uri)>>}}%
1054   \fi

```

```

1055         \else
1056             \BKM@UnescapeHex\BKM@D0@rawaction
1057             \edef\BKM@action{%
1058                 user{%
1059                     <<%
1060                         \BKM@D0@rawaction
1061                     >>%
1062                 }%
1063             }%
1064         \fi
1065     \else
1066         \BKM@EscapeName\BKM@D0@named
1067         \edef\BKM@action{%
1068             user{<</S/Named/N/\BKM@D0@named>>}%
1069         }%
1070     \fi
1071 \else
1072     \BKM@UnescapeHex\BKM@D0@dest
1073     \BKM@EscapeString\BKM@D0@dest
1074     \edef\BKM@action{goto name{\BKM@D0@dest}}%
1075 \fi
1076 \else
1077     \ifx\BKM@D0@dest\@empty
1078         \ifx\BKM@D0@page\@empty
1079             \def\BKM@D0@page{0}%
1080         \else
1081             \BKM@CalcExpr\BKM@D0@page\BKM@D0@page-1%
1082         \fi
1083         \ifx\BKM@D0@view\@empty
1084             \def\BKM@D0@view{Fit}%
1085         \fi
1086         \edef\BKM@action{/D[\BKM@D0@page/\BKM@D0@view]}%
1087     \else
1088         \BKM@UnescapeHex\BKM@D0@dest
1089         \BKM@EscapeString\BKM@D0@dest
1090         \edef\BKM@action{/D(\BKM@D0@dest)}%
1091     \fi
1092     \BKM@UnescapeHex\BKM@D0@goto
1093     \BKM@EscapeString\BKM@D0@goto
1094     \edef\BKM@action{%
1095         user{%
1096             <<%
1097                 /S/GoToR%
1098                 /F(\BKM@D0@goto)%
1099                 \BKM@action
1100             >>%
1101         }%
1102     }%
1103 \fi
1104 \pdfoutline\BKM@attr\BKM@action
1105         count\ifBKM@D0@open\else-\fi\BKM@x@childs
1106         {\BKM@D0@title}%
1107 \endgroup
1108 }
1109 </pdfTeX>

```

## 3.5 Drivers with pdfmark specials

### 3.5.1 Driver dvips

```

1110 <*dvips>
1111 \NeedsTeXFormat{LaTeX2e}
1112 \ProvidesFile{bkm-dvips.def}%

```



```

1113 [2007/09/25 v1.2 bookmark driver for dvips (H0)]%
1114 \def\BKM@PSHeaderFile#1{%
1115   \special{header=#1}%
1116 }
1117 </dvips>

```

### 3.5.2 Driver dvipsone

```

1118 <*dvipsone>
1119 \NeedsTeXFormat{LaTeX2e}
1120 \ProvidesFile{bkm-dvipsone.def}%
1121 [2007/09/25 v1.2 bookmark driver for dvipsone (H0)]%
1122 \def\BKM@PSHeaderFile#1{%
1123   \special{header=#1}%
1124 }
1125 </dvipsone>

```

### 3.5.3 Driver textures

```

1126 <*textures>
1127 \NeedsTeXFormat{LaTeX2e}
1128 \ProvidesFile{bkm-textures.def}%
1129 [2007/09/25 v1.2 bookmark driver for textures (H0)]%
1130 \def\BKM@PSHeaderFile#1{%
1131   \special{prePostScriptfile #1}%
1132 }
1133 </textures>

```

### 3.5.4 Common part

```

1134 <*pdfmark>
1135 \def\BKM@filename{\jobname.out.ps}
1136 \BKM@PSHeaderFile\BKM@filename
1137 \AtEndDocument{\BKM@pdfmark@out}
1138 \def\BKM@pdfmark@out{%
1139   \if@filesw
1140     \newwrite\BKM@file
1141     \immediate\openout\BKM@file=\BKM@filename\relax
1142     \BKM@write{\@percentchar!}%
1143     \BKM@write{/pdfmark where{pop}}%
1144     \BKM@write{%
1145       {%
1146         /globaldict where{pop globaldict}{userdict}ifelse%
1147         /pdfmark/cleartomark load put%
1148       }%
1149     }%
1150     \BKM@write{ifelse}%
1151   \else
1152     \let\BKM@write\@gobble
1153     \let\BKM@DO@entry\@gobbletwo
1154   \fi
1155 }
1156 \def\BKM@write#1{%
1157   \immediate\write\BKM@file
1158 }

```

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`.

```

1159 \def\BKM@DO@entry#1#2{%
1160   \begingroup
1161     \setkeys{BKM@DO}{#1}%
1162     \def\BKM@DO@title{#2}%
1163     \BKM@UnescapeHex\BKM@DO@title

```

```

1164 \expandafter\expandafter\expandafter\BKM@getx
1165 \csname BKM@BKM@DO@id\endcsname\@empty\@empty
1166 \let\BKM@attr\@empty
1167 \ifx\BKM@DO@flags\@empty
1168 \else
1169 \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1170 \fi
1171 \ifx\BKM@DO@color\@empty
1172 \else
1173 \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1174 \fi
1175 \let\BKM@action\@empty
1176 \ifx\BKM@DO@goto\@empty
1177 \ifx\BKM@DO@dest\@empty
1178 \ifx\BKM@DO@named\@empty
1179 \ifx\BKM@DO@rawaction\@empty
1180 \ifx\BKM@DO@uri\@empty
1181 \ifx\BKM@DO@page\@empty
1182 \PackageError{bookmark}{Missing action}\@ehc
1183 \edef\BKM@action{%
1184 /Action/GoTo%
1185 /Page 1%
1186 /View[/Fit]%
1187 }%
1188 \else
1189 \ifx\BKM@DO@view\@empty
1190 \def\BKM@DO@view{Fit}%
1191 \fi
1192 \edef\BKM@action{%
1193 /Action/GoTo%
1194 /Page \BKM@DO@page
1195 /View[/\BKM@DO@view]%
1196 }%
1197 \fi
1198 \else
1199 \BKM@UnescapeHex\BKM@DO@uri
1200 \BKM@EscapeString\BKM@DO@uri
1201 \edef\BKM@action{%
1202 /Action<<%
1203 /Subtype/URI%
1204 /URI(\BKM@DO@uri)%
1205 >>%
1206 }%
1207 \fi
1208 \else
1209 \BKM@UnescapeHex\BKM@DO@rawaction
1210 \edef\BKM@action{%
1211 /Action<<%
1212 \BKM@DO@rawaction
1213 >>%
1214 }%
1215 \fi
1216 \else
1217 \BKM@EscapeName\BKM@DO@named
1218 \edef\BKM@action{%
1219 /Action<<%
1220 /Subtype/Named%
1221 /N/\BKM@DO@named
1222 >>%
1223 }%
1224 \fi
1225 \else

```

```

1226      \BKM@UnescapeHex\BKM@DO@dest
1227      \BKM@EscapeString\BKM@DO@dest
1228      \edef\BKM@action{%
1229        /Action/GoTo%
1230        /Dest(\BKM@DO@dest)cvn%
1231      }%
1232      \fi
1233      \else
1234        \ifx\BKM@DO@dest\@empty
1235          \ifx\BKM@DO@page\@empty
1236            \def\BKM@DO@page{1}%
1237          \fi
1238          \ifx\BKM@DO@view\@empty
1239            \def\BKM@DO@view{Fit}%
1240          \fi
1241          \edef\BKM@action{%
1242            /Page \BKM@DO@page
1243            /View[/\BKM@DO@view]%
1244          }%
1245        \else
1246          \BKM@UnescapeHex\BKM@DO@dest
1247          \BKM@EscapeString\BKM@DO@dest
1248          \edef\BKM@action{%
1249            /Dest(\BKM@DO@dest)cvn%
1250          }%
1251        \fi
1252        \BKM@UnescapeHex\BKM@DO@goto
1253        \BKM@EscapeString\BKM@DO@goto
1254        \edef\BKM@action{%
1255          /Action/GoToR%
1256          /File(\BKM@DO@goto)%
1257          \BKM@action
1258        }%
1259      \fi
1260      \BKM@write{[]}%
1261      \BKM@write{/Title(\BKM@DO@title)}%
1262      \ifnum\BKM@x@chlds>\z@
1263        \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chlds}%
1264      \fi
1265      \ifx\BKM@attr\@empty
1266      \else
1267        \BKM@write{\BKM@attr}%
1268      \fi
1269      \BKM@write{\BKM@action}%
1270      \BKM@write{/OUT pdfmark}%
1271    \endgroup
1272  }
1273 </pdfmark>

```

### 3.6 Common part for pdftex and pdfmark

1274 <\*pdftex | pdfmark>

#### 3.6.1 Write auxiliary file

```

1275 \RequirePackage{auxhook}
1276 \AddLineBeginMainAux{%
1277   \string\providecommand\string\BKM@entry[2]{}%
1278 }
1279 \newcount\BKM@id
1280 \BKM@id=\z@
1281 \def\BKM@0{000}

```

```

1282 \newif\ifBKM@sw
1283 \newcommand*{\bookmark}[2][\]{%
1284   \if@filesw
1285     \begingroup
1286       \bookmarksetup{#1}%
1287       \ifBKM@keeplevel
1288       \else
1289         \xdef\BKM@currentlevel{\BKM@level}%
1290       \fi
1291       \edef\BKM@prev{\the\BKM@id}%
1292       \global\advance\BKM@id\@ne
1293       \BKM@swtrue
1294       \@whilesw\ifBKM@sw\fi{%
1295         \ifnum\ifBKM@startatroot\z@ \else \BKM@prev\fi=\z@
1296         \global\BKM@startatrootfalse
1297         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1298           0{\BKM@level}0%
1299         }%
1300         \BKM@swfalse
1301       \else
1302         \expandafter\expandafter\expandafter\BKM@getx
1303         \csname BKM@\BKM@prev\endcsname
1304         \ifnum\BKM@level>\BKM@x@level\relax
1305         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1306           {\BKM@prev}{\BKM@level}0%
1307         }%
1308         \ifnum\BKM@prev>\z@
1309         \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1310         \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1311           {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1312         }%
1313         \fi
1314         \BKM@swfalse
1315       \else
1316         \let\BKM@prev\BKM@x@parent
1317       \fi
1318     \fi
1319   }%
1320   \pdfstringdef\BKM@title{#2}%
1321   \edef\BKM@FLAGS{\BKM@PrintStyle}%
1322   \BKM@EscapeHex\BKM@dest
1323   \BKM@EscapeHex\BKM@uri
1324   \BKM@EscapeHex\BKM@gotor
1325   \BKM@EscapeHex\BKM@rawaction
1326   \BKM@EscapeHex\BKM@title
1327   \immediate\write\@mainaux{%
1328     \string\BKM@entry{%
1329       id=\number\BKM@id
1330       \ifBKM@open
1331         \ifnum\BKM@level<\BKM@openlevel
1332           ,open%
1333         \fi
1334       \fi
1335       \BKM@auxentry{dest}%
1336       \BKM@auxentry{named}%
1337       \BKM@auxentry{uri}%
1338       \BKM@auxentry{gotor}%
1339       \BKM@auxentry{page}%
1340       \BKM@auxentry{view}%
1341       \BKM@auxentry{rawaction}%
1342       \BKM@auxentry{color}%
1343       \ifnum\BKM@FLAGS>\z@

```

```

1344         ,flags=\BKM@FLAGS
1345     \fi
1346     }{\BKM@title}%
1347 }%
1348 \endgroup
1349 \fi
1350 }
1351 \def\BKM@getx#1#2#3{%
1352   \def\BKM@x@parent{#1}%
1353   \def\BKM@x@level{#2}%
1354   \def\BKM@x@childs{#3}%
1355 }
1356 \def\BKM@auxentry#1{%
1357   \expandafter\ifx\csname BKM@#1\endcsname\@empty
1358   \else
1359     ,#1={\csname BKM@#1\endcsname}%
1360   \fi
1361 }

```

### 3.6.2 Read auxiliary data

```

1362 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1363 \DeclareStringOption[0]{id}
1364 \DeclareBoolOption{open}
1365 \DeclareStringOption{flags}
1366 \DeclareStringOption{color}
1367 \DeclareStringOption{dest}
1368 \DeclareStringOption{named}
1369 \DeclareStringOption{uri}
1370 \DeclareStringOption{gotor}
1371 \DeclareStringOption{page}
1372 \DeclareStringOption{view}
1373 \DeclareStringOption{rawaction}
1374 \AtBeginDocument{%
1375   \let\BKM@entry\BKM@DO@entry
1376 }
1377 </pdfTeX | pdfmark>

```

## 3.7 Option atend

### 3.7.1 Hook

```

1378 <*package>
1379 \ifBKM@atend
1380 \else
\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
given.
1381   \newcommand{\BookmarkAtEnd}[1]{%
1382     \PackageWarning{bookmark}{%
1383       Ignored, because option ‘atend’ is missing%
1384     }%
1385   }%
1386   \expandafter\endinput
1387 \fi
\BookmarkAtEnd
1388 \newcommand*{\BookmarkAtEnd}{%
1389   \g@addto@macro\BKM@EndHook
1390 }
1391 \let\BKM@EndHook\@empty
1392 </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.

```
1393 <*pdftex | pdfmark>
1394 \ifBKM@atend
1395   \AtBeginDocument{%
1396     \AtEndDocument{%
1397       \clearpage
1398       \BKM@EndHook
1399     }%
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 `atenddvi` 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.

```
1403 <*dvi* | vtex>
1404 \ifBKM@atend
1405   \RequirePackage{atenddvi}%
1406   \AtEndDvi{\BKM@EndHook}%
1407 \fi
1408 </dvi* | 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:macros/latex/contrib/oberdiek/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
```

---

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

**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-`TeX`:

```
tex bookmark.dtx
```

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

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

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

### 4.4 Refresh file name databases

If your `TeX` distribution (te`TeX`, mik`TeX`, ...) relies on file name databases, you must refresh these. For example, te`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 `LATeX`.** The `.dtx` chooses its action depending on the format:

**plain-`TeX`:** Run `docstrip` and extract the files.

**`LATeX`:** Generate the documentation.

If you insist on using `LATeX` for `docstrip` (really, `docstrip` does not need `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 pdfL<sup>A</sup>T<sub>E</sub>X:

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

## 5 History

[2007/02/19 v0.1]

- First experimental version.

[2007/02/20 v0.2]

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

[2007/02/21 v0.3]

- Dependency from pdfT<sub>E</sub>X 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  $\epsilon$ -T<sub>E</sub>X 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.

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