

# 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[\langle options \rangle]{bookmark}`  
This is the only place for driver options and option `atend`.
2. `\bookmarksetup{\langle options \rangle}`  
This command is just for setting options.
3. `\bookmark[\langle options \rangle]{\langle title \rangle}`  
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 specifications expect numbers as parameters (unit bp). They can be given either as plain numbers or as length expressions inside `\calc`. Expressions of package `calc` are supported if the package is loaded. Otherwise  $\varepsilon\text{-}\text{\TeX}$ 's `\dimexpr` is used. Example:

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

**named:** Named action name:

FirstPage, LastPage, NextPage, PrevPage

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

**uri:** URI specification.

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

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

Action	Options
GoTo:	dest
GoTo:	page + view
GoToR:	gotor + dest
GoToR:	gotor + page + view
Named:	named
URI:	uri

#### 1.2.4 Level options

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

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

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

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

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

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

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

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

### 1.3 Compatibility with hyperref

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

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

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

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

The following commands are also available:

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

### 1.4 Adding bookmarks at the end

Package option `atend` enables the following macro:

`\BookmarkAtEnd {<stuff>}`

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

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

#### Remarks.

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

Some drivers (`pdftex`, `dvips`, `dvipsone`, `textures`) 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}[2007/04/25]
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: \text{"A" "O" "U" "a" "o" "u" }}
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   goto={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 [2007/04/25 v0.9 PDF bookmarks (HO)]%

```

#### 3.1.1 Requirements

$\varepsilon$ -**TeX**.

```

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\csname 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{\csname 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   \ifx\BKM@temp\BKM@null
422   \else
423     \BKM@CalcParam
424   \fi
425 \fi
426 \edef\BKM@view{\BKM@view\space\BKM@param}%
427 \def\BKM@param{#3}%
428 \ifx\BKM@param\@empty
429   \let\BKM@param\BKM@null
430 \fi
431 \edef\BKM@view{\BKM@view\space\BKM@param}%
432 }
433 \def\BKM@null{null}
434 \@onelevel@sanitize\BKM@null
435 \def\BKM@CalcParam{%
436   \begingroup
437   \let\calc\@firstofone
438   \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
439 }
440 \def\BKM@@CalcParam#1#2#3\@nil{%
441   \ifx\calc#1%
442     \@ifundefined{calc@assign@dimen}{%
443       \setlength{\dimen@}{\dimexpr#2\relax}%
444     }{%
445       \setlength{\dimen@}{#2}%
446     }%
447     \dimen@.99626\dimen@
448     \edef\BKM@param{\strip@pt\dimen@}%
449     \expandafter\endgroup
450     \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
451   \else
452     \endgroup
453   \fi
454 }

```

### 3.1.4 Option atend

```

455 \DeclareBoolOption{atend}
456 \def\BKM@DisableOptions{%
457   \DisableKeyvalOption{BKM}{atend}%
458 }

```

### 3.1.5 Driver setup and loading

#### Driver detection.

```

459 \def\BKM@DefineDriverKey#1{%
460   \define@key{BKM}{#1}[]{%
461     \def\BKM@driver{#1}%
462   }%
463   \g@addto@macro\BKM@DisableOptions{%

```

```

464 \DisableKeyvalOption{BKM}{#1}%
465 }%
466 }
467 \BKM@DefineDriverKey{pdftex}
468 \BKM@DefineDriverKey{dvips}
469 \BKM@DefineDriverKey{dvipsone}
470 \BKM@DefineDriverKey{textures}
471 \BKM@DefineDriverKey{dvi.pdfm}
472 \BKM@DefineDriverKey{dvi.pdfmx}
473 \BKM@DefineDriverKey{xetex}
474 \BKM@DefineDriverKey{vtex}
475 \define@key{BKM}{dvi.pdfmx-outline-open}[true]{%
476 \expandafter\ifx\csname if#1\expandafter\endcsname
477 \csname iftrue\endcsname
478 \chardef\SpecialDvi.pdfmxOutlineOpen\@ne
479 \else
480 \chardef\SpecialDvi.pdfmxOutlineOpen\z@
481 \fi
482 }
483 \g@addto@macro\BKM@DisableOptions{%
484 \DisableKeyvalOption{BKM}{dvi.pdfmx-outline-open}%
485 }

486 \InputIfFileExists{bookmark.cfg}{\{}}{}
487 \providecommand*{\BookmarkDriverDefault}{dvips}
488 \ifpdf
489 \def\BKM@driver{pdftex}%
490 \else
491 \ifxetex
492 \def\BKM@driver{dvi.pdfm}%
493 \else
494 \ifvtex
495 \def\BKM@driver{vtex}%
496 \else
497 \edef\BKM@driver{\BookmarkDriverDefault}%
498 \fi
499 \fi
500 \fi

```

### Process options.

```

501 \ProcessKeyvalOptions*
502 \BKM@DisableOptions

```

### Driver validation and loading.

```

503 \newif\ifBKM@dvi.pdfmxOutlineOpen
504 \begingroup\expandafter\expandafter\expandafter\endgroup
505 \expandafter\ifx\csname SpecialDvi.pdfmxOutlineOpen\endcsname\relax
506 \else
507 \ifnum\SpecialDvi.pdfmxOutlineOpen>\z@
508 \BKM@dvi.pdfmxOutlineOpentrue
509 \fi
510 \fi

511 \def\BKM@temp{dvi.pdfmx}%
512 \ifx\BKM@temp\BKM@driver
513 \def\BKM@driver{dvi.pdfm}%
514 \fi
515 \def\BKM@temp{pdftex}%
516 \ifpdf
517 \ifx\BKM@temp\BKM@driver
518 \else
519 \PackageWarningNoLine{bookmark}{%
520 Wrong driver ‘\BKM@driver’, using ‘pdftex’ instead%

```

```

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

```

### 3.1.6 Compatibility for hyperref

```

571 \renewcommand*{\pdfbookmark}[3][0]{%
572 \bookmark[level=#1,dest={#3.#1}]{#2}%
573 \hyper@anchorstart{#3.#1}\hyper@anchorend
574 }
575 \renewcommand*{\currentpdfbookmark}{%
576 \pdfbookmark[\BKM@currentlevel]%
577 }
578 \renewcommand*{\subpdfbookmark}{%
579 \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%
580 \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%

```

```

581 }
582 \renewcommand*{\belowpdfbookmark}[2]{%
583   \xdef\BKM@temp{\number\BKM@currentlevel}%
584   \subpdfbookmark{#1}{#2}%
585   \global\let\BKM@currentlevel\BKM@temp
586 }

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

607 \let\ReadBookmarks\relax
608 \end{package}

```

### 3.2 Driver for dvipdfm

```

609 \documentclass{dvipdfm}
610 \NeedsTeXFormat{LaTeX2e}
611 \ProvidesFile{bkm-dvipdfm.def}%
612   [2007/04/25 v0.9 bookmark driver for dvipdfm (H0)]%

613 \newcount\BKM@id
614 \BKM@id=\z@

615 \def\BKM@O{000}

616 \newif\ifBKM@sw

617 \newcommand*{\bookmark}[2][1]{%
618   \if@filesw
619     \begingroup
620       \bookmarksetup{#1}%
621       \ifBKM@keeplevel
622       \else
623         \xdef\BKM@currentlevel{\BKM@level}%
624       \fi
625       \edef\BKM@prev{\the\BKM@id}%
626       \global\advance\BKM@id\@ne
627       \BKM@swtrue
628       \@whiles\ifBKM@sw\fi{%
629         \def\BKM@abslevel{1}%
630         \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
631           \global\BKM@startatrootfalse
632           \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
633             0{\BKM@level}\BKM@abslevel
634           }%
635           \BKM@swfalse
636         \else
637           \expandafter\expandafter\expandafter\BKM@getx

```



```

638         \csname BKM@BKM@prev\endcsname
639         \ifnum\BKM@level>\BKM@x@level\relax
640         \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
641         \expandafter\xdef\csname BKM@the\BKM@id\endcsname{%
642         {\BKM@prev}{\BKM@level}\BKM@abslevel
643         }%
644         \BKM@swfalse
645         \else
646         \let\BKM@prev\BKM@x@parent
647         \fi
648     \fi
649 }%
650 \pdfstringdef\BKM@title{#2}%
651 \edef\BKM@FLAGS{\BKM@PrintStyle}%
652 \let\BKM@action\@empty
653 \ifx\BKM@goto\@empty
654     \ifx\BKM@dest\@empty
655         \ifx\BKM@named\@empty
656             \ifx\BKM@rawaction\@empty
657                 \ifx\BKM@uri\@empty
658                     \ifx\BKM@page\@empty
659                         \PackageError{bookmark}{Missing action}\@ehc
660                         \edef\BKM@action{/Dest[@page1/Fit]}%
661                     \else
662                         \ifx\BKM@view\@empty
663                             \def\BKM@view{Fit}%
664                         \fi
665                         \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]}%
666                     \fi
667                 \else
668                     \BKM@EscapeString\BKM@uri
669                     \edef\BKM@action{%
670                     /A<<%
671                     /S/URI%
672                     /URI(\BKM@uri)%
673                     >>%
674                     }%
675                 \fi
676             \else
677                 \edef\BKM@action{/A<<\BKM@rawaction>>}%
678             \fi
679         \else
680             \BKM@EscapeName\BKM@named
681             \edef\BKM@action{%
682             /A<</S/Named/N/\BKM@named>>%
683             }%
684         \fi
685     \else
686         \BKM@EscapeString\BKM@dest
687         \edef\BKM@action{%
688         /A<<%
689         /S/GoTo%
690         /D(\BKM@dest)%
691         >>%
692         }%
693     \fi
694 \else
695     \ifx\BKM@dest\@empty
696         \ifx\BKM@page\@empty
697             \def\BKM@page{0}%
698         \else
699             \BKM@CalcExpr\BKM@page\BKM@page-1%

```

```

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

747 \def\BKM@getx#1#2#3{%
748     \def\BKM@x@parent{#1}%
749     \def\BKM@x@level{#2}%
750     \def\BKM@x@abslevel{#3}%
751 }

752 </dviPDFm>

```

### 3.3 Driver for VTeX

```

753 <*vtex>
754 \NeedsTeXFormat{LaTeX2e}
755 \ProvidesFile{bkm-vtex.def}%
756 [2007/04/25 v0.9 bookmark driver for VTeX (H0)]%
757 \ifvtexpdf
758 \else

```

```

759 \PackageWarningNoLine{bookmark}{%
760   The VTeX driver only supports PDF mode%
761 }%
762 \fi

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

765 \def\BKM@O{00}

766 \newif\ifBKM@sw

767 \newcommand*{\bookmark}[2][{}]{%
768   \if@filesw
769     \begingroup
770     \bookmarksetup{#1}%
771     \ifBKM@keeplevel
772     \else
773       \xdef\BKM@currentlevel{\BKM@level}%
774     \fi
775     \edef\BKM@prev{\the\BKM@id}%
776     \global\advance\BKM@id\@ne
777     \BKM@swtrue
778     \@whiles\ifBKM@sw\fi{%
779       \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
780       \global\BKM@startatrootfalse
781       \def\BKM@parent{0}%
782       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
783         0{\BKM@level}%
784       }%
785       \BKM@swfalse
786     \else
787       \expandafter\expandafter\expandafter\BKM@getx
788       \csname BKM@\BKM@prev\endcsname
789       \ifnum\BKM@level>\BKM@x@level\relax
790       \let\BKM@parent\BKM@prev
791       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
792         {\BKM@prev}{\BKM@level}%
793       }%
794       \BKM@swfalse
795     \else
796       \let\BKM@prev\BKM@x@parent
797     \fi
798   \fi
799 }%
800 \pdfstringdef\BKM@title{#2}%
801 \BKM@vtex@title
802 \edef\BKM@FLAGS{\BKM@PrintStyle}%
803 \let\BKM@action\@empty
804 \ifx\BKM@goto\@empty
805   \ifx\BKM@dest\@empty
806     \ifx\BKM@named\@empty
807       \ifx\BKM@rawaction\@empty
808         \ifx\BKM@uri\@empty
809           \ifx\BKM@page\@empty
810             \PackageError{bookmark}{Missing action}\@ehc
811             \def\BKM@action{!}%
812           \else
813             \edef\BKM@action{!\BKM@page}%
814           \fi
815         \else
816           \BKM@EscapeString\BKM@uri
817           \edef\BKM@action{%
818             <u=%
819             /S/URI%

```

```

820             /URI(\BKM@uri)%
821             >%
822             }%
823         \fi
824     \else
825         \edef\BKM@action{<u=\BKM@rawaction>}%
826     \fi
827 \else
828     \BKM@EscapeName\BKM@named
829     \edef\BKM@action{%
830         <u=%
831         /S/Named%
832         /N/\BKM@named
833         >%
834         }%
835     \fi
836 \else
837     \BKM@EscapeString\BKM@dest
838     \edef\BKM@action{\BKM@dest}%
839 \fi
840 \else
841     \ifx\BKM@dest\@empty
842     \ifx\BKM@page\@empty
843         \def\BKM@page{1}%
844     \fi
845     \ifx\BKM@view\@empty
846         \def\BKM@view{Fit}%
847     \fi
848     \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
849 \else
850     \BKM@EscapeString\BKM@dest
851     \edef\BKM@action{/D(\BKM@dest)}%
852 \fi
853 \BKM@EscapeString\BKM@gotor
854 \edef\BKM@action{%
855     <u=%
856     /S/GoToR%
857     /F(\BKM@gotor)%
858     \BKM@action
859     >>%
860     }%
861 \fi
862 \ifx\BKM@color\@empty
863     \let\BKM@RGBcolor\@empty
864 \else
865     \expandafter\BKM@toRGB\BKM@color\@nil
866 \fi
867 \special{%
868     !outline \BKM@action;%
869     p=\BKM@parent,%
870     i=\number\BKM@id,%
871     s=%
872     \ifBKM@open
873         \ifnum\BKM@level<\BKM@openlevel
874             o%
875         \else
876             c%
877         \fi
878     \else
879         c%
880     \fi,%
881     \ifx\BKM@RGBcolor\@empty

```

```

882         \else
883             c=\BKM@RGBcolor,%
884         \fi
885         \ifnum\BKM@FLAGS>\z@
886             f=\BKM@FLAGS,%
887         \fi
888         t=\BKM@title
889     }%
890 \endgroup
891 \fi
892 }

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

897 \def\BKM@toRGB#1 #2 #3\@nil{%
898     \let\BKM@RGBcolor\@empty
899     \BKM@toRGBComponent{#1}%
900     \BKM@toRGBComponent{#2}%
901     \BKM@toRGBComponent{#3}%
902 }

903 \def\BKM@toRGBComponent#1{%
904     \dimen@=#1pt\relax
905     \ifdim\dimen@>\z@
906         \ifdim\dimen@<\p@
907             \dimen@=255\dimen@
908             \advance\dimen@ by 32768sp\relax
909             \divide\dimen@ by 65536\relax
910             \dimen@ii=\dimen@
911             \divide\dimen@ii by 16\relax
912             \edef\BKM@RGBcolor{%
913                 \BKM@RGBcolor
914                 \BKM@toHexDigit\dimen@ii
915             }%
916             \dimen@ii=16\dimen@ii
917             \advance\dimen@-\dimen@ii
918             \edef\BKM@RGBcolor{%
919                 \BKM@RGBcolor
920                 \BKM@toHexDigit\dimen@
921             }%
922         \else
923             \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
924         \fi
925     \else
926         \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
927     \fi
928 }

929 \def\BKM@toHexDigit#1{%
930     \expandafter\ifcase\expandafter\@firstofone\expandafter{\number#1} %
931         0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
932         8\or 9\or A\or B\or C\or D\or E\or F%
933     \fi
934 }

935 \begingroup
936 \catcode'\|=0 %
937 \catcode'\|=12 %
938 \gdef\BKM@vtex@title{%
939     \@onelevel@sanitize\BKM@title
940     \edef\BKM@title{\expandafter\BKM@vtex@leftparen\BKM@title\(|@nil}%
941     \edef\BKM@title{\expandafter\BKM@vtex@rightparen\BKM@title\)|@nil}%
942     \edef\BKM@title{\expandafter\BKM@vtex@zero\BKM@title\0|@nil}%
943     \edef\BKM@title{\expandafter\BKM@vtex@one\BKM@title\1|@nil}%

```

```

944 |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
945 |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
946 }%
947 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
948 #1%
949 |ifx||#2||%
950 |else
951 (%)
952 |@ReturnAfterFi{%
953 |BKM@vtex@leftparen#2|@nil
954 }%
955 |fi
956 }%
957 |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
958 #1%
959 |ifx||#2||%
960 |else
961 )%
962 |@ReturnAfterFi{%
963 |BKM@vtex@rightparen#2|@nil
964 }%
965 |fi
966 }%
967 |gdef|BKM@vtex@zero#1\0#2|@nil{%
968 #1%
969 |ifx||#2||%
970 |else
971 |noexpand|hv@pdf@char0%
972 |@ReturnAfterFi{%
973 |BKM@vtex@zero#2|@nil
974 }%
975 |fi
976 }%
977 |gdef|BKM@vtex@one#1\1#2|@nil{%
978 #1%
979 |ifx||#2||%
980 |else
981 |noexpand|hv@pdf@char1%
982 |@ReturnAfterFi{%
983 |BKM@vtex@one#2|@nil
984 }%
985 |fi
986 }%
987 |gdef|BKM@vtex@two#1\2#2|@nil{%
988 #1%
989 |ifx||#2||%
990 |else
991 |noexpand|hv@pdf@char2%
992 |@ReturnAfterFi{%
993 |BKM@vtex@two#2|@nil
994 }%
995 |fi
996 }%
997 |gdef|BKM@vtex@three#1\3#2|@nil{%
998 #1%
999 |ifx||#2||%
1000 |else
1001 |noexpand|hv@pdf@char3%
1002 |@ReturnAfterFi{%
1003 |BKM@vtex@three#2|@nil
1004 }%
1005 |fi

```

```

1006 }%
1007 \endgroup
1008 \long\def\@ReturnafterFi#1\fi{\fi#1}
1009 \</vtex>

```

### 3.4 Driver for pdfTeX

```

1010 \<*pdfTeX>
1011 \NeedsTeXFormat{LaTeX2e}
1012 \ProvidesFile{bkm-pdfTeX.def}%
1013 [2007/04/25 v0.9 bookmark driver for pdfTeX (H0)]%
1014 \def\BKM@D0@entry#1#2{%
1015   \begingroup
1016     \setkeys{BKM@D0}{#1}%
1017     \def\BKM@D0@title{#2}%
1018     \BKM@UnescapeHex\BKM@D0@title
1019     \expandafter\expandafter\expandafter\BKM@getx
1020       \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1021     \let\BKM@attr\@empty
1022     \ifx\BKM@D0@flags\@empty
1023       \else
1024         \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1025       \fi
1026     \ifx\BKM@D0@color\@empty
1027       \else
1028         \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1029       \fi
1030     \ifx\BKM@attr\@empty
1031       \else
1032         \edef\BKM@attr{attr{\BKM@attr}}%
1033       \fi
1034     \let\BKM@action\@empty
1035     \ifx\BKM@D0@goto\@empty
1036       \ifx\BKM@D0@dest\@empty
1037         \ifx\BKM@D0@named\@empty
1038           \ifx\BKM@D0@rawaction\@empty
1039             \ifx\BKM@D0@uri\@empty
1040               \ifx\BKM@D0@page\@empty
1041                 \PackageError{bookmark}{Missing action}\@ehc
1042                 \edef\BKM@action{goto page1{/Fit}}%
1043               \else
1044                 \ifx\BKM@D0@view\@empty
1045                   \def\BKM@D0@view{Fit}%
1046                 \fi
1047                 \edef\BKM@action{goto page\BKM@D0@page{/ \BKM@D0@view}}%
1048               \fi
1049             \else
1050               \BKM@UnescapeHex\BKM@D0@uri
1051               \BKM@EscapeString\BKM@D0@uri
1052               \edef\BKM@action{user{<</S/URI/URI(\BKM@D0@uri)>>}}%
1053             \fi
1054           \else
1055             \BKM@UnescapeHex\BKM@D0@rawaction
1056             \edef\BKM@action{%
1057               user{%
1058                 <<%
1059                   \BKM@D0@rawaction
1060                 >>%
1061               }%
1062             }%
1063           \fi
1064         \else
1065           \BKM@EscapeName\BKM@D0@named

```

```

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

```

## 3.5 Drivers with pdfmark specials

### 3.5.1 Driver dvips

```

1109 <*dvips>
1110 \NeedsTeXFormat{LaTeX2e}
1111 \ProvidesFile{bkm-dvips.def}%
1112 [2007/04/25 v0.9 bookmark driver for dvips (HO)]%
1113 \def\BKM@PSHeaderFile#1{%
1114     \special{header=#1}%
1115 }
1116 </dvips>

```

### 3.5.2 Driver dvipsone

```

1117 <*dvipsone>
1118 \NeedsTeXFormat{LaTeX2e}
1119 \ProvidesFile{bkm-dvipsone.def}%
1120 [2007/04/25 v0.9 bookmark driver for dvipsone (HO)]%

```



```

1121 \def\BKM@PSHeaderFile#1{%
1122   \special{header=#1}%
1123 }
1124 </dvipsone>

```

### 3.5.3 Driver textures

```

1125 <*textures>
1126 \NeedsTeXFormat{LaTeX2e}
1127 \ProvidesFile{bkm-textures.def}%
1128   [2007/04/25 v0.9 bookmark driver for textures (HO)]%
1129 \def\BKM@PSHeaderFile#1{%
1130   \special{prePostScriptfile #1}%
1131 }
1132 </textures>

```

### 3.5.4 Common part

```

1133 <*pdfmark>
1134 \def\BKM@filename{\jobname.out.ps}
1135 \BKM@PSHeaderFile\BKM@filename
1136 \AtEndDocument{\BKM@pdfmark@out}
1137 \def\BKM@pdfmark@out{%
1138   \newwrite\BKM@file
1139   \immediate\openout\BKM@file=\BKM@filename\relax
1140   \BKM@write{\@percentchar!}%
1141   \BKM@write{/pdfmark where{pop}}}%
1142   \BKM@write{%
1143     {%
1144       /globaldict where{pop globaldict}{userdict}ifelse%
1145       /pdfmark/cleartomark load put%
1146     }%
1147   }%
1148   \BKM@write{ifelse}%
1149 }
1150 \def\BKM@write#1{%
1151   \immediate\write\BKM@file
1152 }

```

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.

```

1153 \def\BKM@DO@entry#1#2{%
1154   \begingroup
1155     \setkeys{BKM@DO}{#1}%
1156     \def\BKM@DO@title{#2}%
1157     \BKM@UnescapeHex\BKM@DO@title
1158     \expandafter\expandafter\expandafter\BKM@getx
1159     \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1160     \let\BKM@attr\@empty
1161     \ifx\BKM@DO@flags\@empty
1162     \else
1163       \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1164     \fi
1165     \ifx\BKM@DO@color\@empty
1166     \else
1167       \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1168     \fi
1169     \let\BKM@action\@empty
1170     \ifx\BKM@DO@goto\@empty
1171     \ifx\BKM@DO@dest\@empty
1172     \ifx\BKM@DO@named\@empty
1173     \ifx\BKM@DO@rawaction\@empty
1174     \ifx\BKM@DO@uri\@empty

```

```

1175         \ifx\BKM@DO@page\@empty
1176             \PackageError{bookmark}{Missing action}\@ehc
1177             \edef\BKM@action{%
1178                 /Action/GoTo%
1179                 /Page 1%
1180                 /View[/Fit]%
1181             }%
1182         \else
1183             \ifx\BKM@DO@view\@empty
1184                 \def\BKM@DO@view{Fit}%
1185             \fi
1186             \edef\BKM@action{%
1187                 /Action/GoTo%
1188                 /Page \BKM@DO@page
1189                 /View[/\BKM@DO@view]%
1190             }%
1191         \fi
1192     \else
1193         \BKM@UnescapeHex\BKM@DO@uri
1194         \BKM@EscapeString\BKM@DO@uri
1195         \edef\BKM@action{%
1196             /Action<<%
1197             /Subtype/URI%
1198             /URI(\BKM@DO@uri)%
1199             >>%
1200         }%
1201     \fi
1202 \else
1203     \BKM@UnescapeHex\BKM@DO@rawaction
1204     \edef\BKM@action{%
1205         /Action<<%
1206         \BKM@DO@rawaction
1207         >>%
1208     }%
1209 \fi
1210 \else
1211     \BKM@EscapeName\BKM@DO@named
1212     \edef\BKM@action{%
1213         /Action<<%
1214         /Subtype/Named%
1215         /N/\BKM@DO@named
1216         >>%
1217     }%
1218 \fi
1219 \else
1220     \BKM@UnescapeHex\BKM@DO@dest
1221     \BKM@EscapeString\BKM@DO@dest
1222     \edef\BKM@action{%
1223         /Action/GoTo%
1224         /Dest(\BKM@DO@dest)cvn%
1225     }%
1226 \fi
1227 \else
1228     \ifx\BKM@DO@dest\@empty
1229         \ifx\BKM@DO@page\@empty
1230             \def\BKM@DO@page{1}%
1231         \fi
1232         \ifx\BKM@DO@view\@empty
1233             \def\BKM@DO@view{Fit}%
1234         \fi
1235         \edef\BKM@action{%
1236             /Page \BKM@DO@page

```

```

1237         /View[/\BKM@DO@view]%
1238     }%
1239     \else
1240         \BKM@UnescapeHex\BKM@DO@dest
1241         \BKM@EscapeString\BKM@DO@dest
1242         \edef\BKM@action{%
1243             /Dest(\BKM@DO@dest) cvn%
1244         }%
1245     \fi
1246     \BKM@UnescapeHex\BKM@DO@goto
1247     \BKM@EscapeString\BKM@DO@goto
1248     \edef\BKM@action{%
1249         /Action/GoToR%
1250         /F(\BKM@DO@goto)%
1251     \BKM@action
1252     }%
1253     \fi
1254     \BKM@write{[]}%
1255     \BKM@write{/Title(\BKM@DO@title)}%
1256     \ifnum\BKM@x@chlds>\z@
1257     \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chlds}%
1258     \fi
1259     \ifx\BKM@attr\@empty
1260     \else
1261         \BKM@write{\BKM@attr}%
1262     \fi
1263     \BKM@write{\BKM@action}%
1264     \BKM@write{/OUT pdfmark}%
1265 \endgroup
1266 }
1267 </pdfmark>

```

### 3.6 Common part for pdftex and pdfmark

1268 <\*pdftex | pdfmark>

#### 3.6.1 Write auxiliary file

```

1269 \RequirePackage{auxhook}
1270 \AddLineBeginMainAux{%
1271     \string\providecommand\string\BKM@entry[2]{}%
1272 }
1273 \newcount\BKM@id
1274 \BKM@id=\z@
1275 \def\BKM@O{000}
1276 \newif\ifBKM@sw
1277 \newcommand*{\bookmark}[2][1]{%
1278     \if@filesw
1279         \begingroup
1280             \bookmarksetup{#1}%
1281             \ifBKM@keeplevel
1282             \else
1283                 \xdef\BKM@currentlevel{\BKM@level}%
1284             \fi
1285             \edef\BKM@prev{\the\BKM@id}%
1286             \global\advance\BKM@id\@ne
1287             \BKM@swtrue
1288             \@whiles\ifBKM@sw\fi{%
1289                 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1290                 \global\BKM@startatrootfalse
1291                 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1292                     O{\BKM@level}O%

```

```

1293     }%
1294     \BKM@swfalse
1295   \else
1296     \expandafter\expandafter\expandafter\BKM@getx
1297       \csname BKM@\BKM@prev\endcsname
1298     \ifnum\BKM@level>\BKM@x@level\relax
1299       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1300         {\BKM@prev}{\BKM@level}0%
1301       }%
1302       \ifnum\BKM@prev>\z@
1303         \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1304         \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1305           {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1306         }%
1307       \fi
1308       \BKM@swfalse
1309     \else
1310       \let\BKM@prev\BKM@x@parent
1311     \fi
1312   \fi
1313 }%
1314 \pdfstringdef\BKM@title{#2}%
1315 \edef\BKM@FLAGS{\BKM@PrintStyle}%
1316 \BKM@EscapeHex\BKM@dest
1317 \BKM@EscapeHex\BKM@uri
1318 \BKM@EscapeHex\BKM@goto
1319 \BKM@EscapeHex\BKM@rawaction
1320 \BKM@EscapeHex\BKM@title
1321 \immediate\write\@mainaux{%
1322   \string\BKM@entry{%
1323     id=\number\BKM@id
1324     \ifBKM@open
1325       \ifnum\BKM@level<\BKM@openlevel
1326         ,open%
1327       \fi
1328     \fi
1329     \BKM@auxentry{dest}%
1330     \BKM@auxentry{named}%
1331     \BKM@auxentry{uri}%
1332     \BKM@auxentry{goto}%
1333     \BKM@auxentry{page}%
1334     \BKM@auxentry{view}%
1335     \BKM@auxentry{rawaction}%
1336     \BKM@auxentry{color}%
1337     \ifnum\BKM@FLAGS>\z@
1338       ,flags=\BKM@FLAGS
1339     \fi
1340   }{\BKM@title}%
1341 }%
1342 \endgroup
1343 \fi
1344 }

1345 \def\BKM@getx#1#2#3{%
1346   \def\BKM@x@parent{#1}%
1347   \def\BKM@x@level{#2}%
1348   \def\BKM@x@childs{#3}%
1349 }

1350 \def\BKM@auxentry#1{%
1351   \expandafter\ifx\csname BKM@#1\endcsname\@empty
1352   \else
1353     ,#1={\csname BKM@#1\endcsname}%
1354   \fi

```

```
1355 }
```

### 3.6.2 Read auxiliary data

```
1356 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1357 \DeclareStringOption[0]{id}
1358 \DeclareBoolOption{open}
1359 \DeclareStringOption{flags}
1360 \DeclareStringOption{color}
1361 \DeclareStringOption{dest}
1362 \DeclareStringOption{named}
1363 \DeclareStringOption{uri}
1364 \DeclareStringOption{gotor}
1365 \DeclareStringOption{page}
1366 \DeclareStringOption{view}
1367 \DeclareStringOption{rawaction}

1368 \AtBeginDocument{%
1369   \let\BKM@entry\BKM@DO@entry
1370 }

1371 </pdftex | pdfmark>
```

## 3.7 Option atend

### 3.7.1 Hook

```
1372 <*package>
1373 \ifBKM@atend
1374 \else

\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
given.

1375   \newcommand{\BookmarkAtEnd}[1]{%
1376     \PackageWarning{bookmark}{%
1377       Ignored, because option ‘atend’ is missing%
1378     }%
1379   }%

1380   \expandafter\endinput
1381 \fi

\BookmarkAtEnd

1382 \newcommand*{\BookmarkAtEnd}{%
1383   \g@addto@macro\BKM@EndHook
1384 }

1385 \let\BKM@EndHook\@empty
1386 </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.

```
1387 <*pdftex | pdfmark>
1388 \ifBKM@atend
1389   \AtBeginDocument{%
1390     \AtEndDocument{%
1391       \clearpage
```

```

1392      \BKM@EndHook
1393    }%
1394  }%
1395 \fi
1396 </pdfTeX | pdfmark>

```

### 3.7.3 Drivers using \AtEndDvi

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

```

1397 <*dvipdfm | vTeX>
1398 \ifBKM@atend
1399   \RequirePackage{atendddvi}%
1400   \AtEndDvi{\BKM@EndHook}%
1401 \fi
1402 </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:macros/latex/contrib/oberdiek/oberdiek-tds.zip](#)

### 4.2 Bundle installation

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

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

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

```

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

```

### 4.3 Package installation

**Unpacking.** The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain-T<sub>E</sub>X:

```
tex bookmark.dtx
```

---

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

**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 (`teTeX`, `mikTeX`, ...) relies on file name databases, you must refresh these. For example, `teTeX` 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 `pdf $\LaTeX$` :

```
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 `bookmarkstype` respected.

[2007/03/02 v0.5]

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

[2007/03/03 v0.6]

- Option `numbered` as alias for `hyperref`'s `bookmarksnumbered`.

[2007/03/07 v0.7]

- Dependency from  $\epsilon$ -TeX removed.

[2007/04/09 v0.8]

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

[2007/04/25 v0.9]

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

## 6 Index

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

### Symbols

`\"` ..... 3332



\(	940, 947	710, 714, 741, 803, 811, 813,
\)	941, 957	817, 825, 829, 838, 848, 851,
\@ReturnafterFi	1008	854, 858, 868, 1034, 1042, 1047,
\@bookmarksoopenlevel	158	1052, 1056, 1066, 1073, 1085,
\@car	173, 327, 341	1089, 1093, 1098, 1103, 1169,
\@ehc	291, 331,	1177, 1186, 1195, 1204, 1212,
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	734, 803, 804, 805, 806, 807,	1332, 1333, 1334, 1335, 1336, 1350
	808, 809, 841, 842, 845, 862,	\BKM@CalcExpr
	863, 881, 898, 1020, 1021, 1022,	104,
	1026, 1030, 1034, 1035, 1036,	115, 205, 579, 640, 699, 1080, 1303
	1037, 1038, 1039, 1040, 1044,	\BKM@CalcParam
	1076, 1077, 1082, 1159, 1160,	355,
	1161, 1165, 1169, 1170, 1171,	369, 377, 385, 393, 412, 423, 435
	1172, 1173, 1174, 1175, 1183,	\BKM@CalcResult
	1228, 1229, 1232, 1259, 1351, 1385	. 579, 580, 1303, 1305
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\@firstoftwo	239	310, 313, 316, 319, 346
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	362, 401, 403, 438, 440, 865, 897	\BKM@CheckXYZ
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\\	937	576, 579, 583, 585, 623, 773, 1283
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		468, 469, 470, 471, 472, 473, 474
		\BKM@depth
		162, 164, 169, 199, 588
		\BKM@dest
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