

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.

Contents

1	Documentation	2
1.1	Introduction	2
1.2	Options	3
1.2.1	Driver options	3
1.2.2	Style options	3
1.2.3	Action options	4
1.2.4	Level options	4
1.3	Compatibility with <code>hyperref</code>	5
1.4	Adding bookmarks at the end	5
1.5	Limitations/Todos	6
2	Example	6
3	Implementation	7
3.1	Package	7
3.1.1	Requirements	8
3.1.2	Package options	8
3.1.3	Action options	11
3.1.4	Option <code>atend</code>	14
3.1.5	Driver setup and loading	14
3.1.6	Compatibility for <code>hyperref</code>	16
3.2	Driver for <code>dvipdfm</code>	16
3.3	Driver for <code>VT_EX</code>	19
3.4	Driver for <code>pdfT_EX</code>	23
3.5	Drivers with <code>pdfmark</code> specials	25
3.5.1	Driver <code>dvips</code>	25
3.5.2	Driver <code>dvipsone</code>	25
3.5.3	Driver <code>textures</code>	25
3.5.4	Common part	25
3.6	Common part for <code>pdftex</code> and <code>pdfmark</code>	28
3.6.1	Write auxiliary file	28
3.6.2	Read auxiliary data	29
3.7	Option <code>atend</code>	29
3.7.1	Hook	29
3.7.2	Drivers using hooks at end of document	30
3.7.3	Drivers using <code>\AtEndDvi</code>	30

4	Installation	30
4.1	Download	30
4.2	Bundle installation	31
4.3	Package installation	31
4.4	Refresh file name databases	31
4.5	Some details for the interested	31
5	History	32
[2007/02/19 v0.1]		32
[2007/02/20 v0.2]		32
[2007/02/21 v0.3]		32
[2007/02/22 v0.4]		32
[2007/03/02 v0.5]		32
[2007/03/03 v0.6]		32
[2007/03/07 v0.7]		33
[2007/04/09 v0.8]		33
[2007/04/25 v0.9]		33
[2007/05/29 v1.0]		33
[2007/07/13 v1.1]		33
[2007/09/25 v1.2]		33
[2008/08/08 v1.3]		33
[2008/09/13 v1.4]		33
[2009/08/13 v1.5]		33
[2009/12/06 v1.6]		33
[2009/12/07 v1.7]		33
6	Index	34

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 \TeX compile run.
- The font style and color of the bookmarks can be changed.
- More actions than simple GoTo actions are possible.

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

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

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

1.2 Options

Options can be given at three places:

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

1.2.1 Driver options

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

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

Open bookmarks with dvipdfmx. Since 2007-04-25 the cvs version of `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 ϵ -TeX's `\dimexpr` is used. Example:

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

`view={XYZ 0 \calc{\paperheight} null}`

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

named: Named action name:

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

gotor: Name of the external PDF file.

uri: URI specification.

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

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

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

1.2.4 Level options

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

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

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

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

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

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

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

```

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

```

1.3 Compatibility with hyperref

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

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

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

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

The following commands are also available:

```

\pdfbookmark
\currentpdfbookmark
\subpdfbookmark
\belowpdfbookmark

```

1.4 Adding bookmarks at the end

Package option `atend` enables the following macro:

`\BookmarkAtEnd {<stuff>}`

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

```

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

```

Remarks.

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

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

The implementation of the other drivers (`dvipdfm`, `xetex`, `vtex`) depends on `\special` that does not have an effect after the last page. In this case `\AtEndDvi` of package `atenddvi` helps. It puts its argument on last page of the document. Two L^AT_EX 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/ToDo

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

2 Example

```

1 \example
2 \documentclass{article}
3 \usepackage{xcolor}[2007/01/21]
4 \usepackage{hyperref}
5 \usepackage[
6   open,
7   openlevel=2,
8   atend
9 ]{bookmark}[2009/12/07]
10
11 \bookmarksetup{color=blue}
12
13 \BookmarkAtEnd{%
14   \bookmarksetup{startatroot}%
15   \bookmark[named=LastPage, level=0]{End/Last page}%
16   \bookmark[named=FirstPage, level=1]{First page}%
17 }
18
19 \begin{document}
20 \section{First section}
21 \subsection{Subsection A}
22 \begin{figure}
23   \hypertarget{fig}{}%
24   A figure.
25 \end{figure}
26 \bookmark[
27   rellevel=1,
28   keeplevel,
29   dest=fig
30 ]{A figure}
31 \subsection{Subsection B}
32 \subsubsection{Subsubsection C}
33 \subsection{Umlauts: "A" "O" "U" "a" "o" "u" "ss"}
34 \newpage
35 \bookmarksetup{
36   bold,
37   color=[rgb]{1,0,0}
38 }
39 \section{Very important section}
40 \bookmarksetup{
41   italic,
42   bold=false,
43   color=blue
44 }
```

```

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

```

3 Implementation

3.1 Package

```

97 <*package>
98 \NeedsTeXFormat{LaTeX2e}
99 \ProvidesPackage{bookmark}%
100 [2009/12/07 v1.7 PDF bookmarks (HO)]%

```

3.1.1 Requirements

ϵ -**T**_EX.

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

Escape features of pdf**T**_EX.

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

Packages.

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

3.1.2 Package options

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



```

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

```

```

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

```

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

```

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

```

Redefinitions hyperref's options

```

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

```

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

```

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

```

```
271 }%
```

Options for color.

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

3.1.3 Action options

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

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

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

```

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

```

```

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

```

```

451 \fi
452 }

```

3.1.4 Option atend

```

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

```

3.1.5 Driver setup and loading

Driver detection.

```

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

```

Process options.

```

499 \ProcessKeyvalOptions*
500 \BKM@DisableOptions

```

Driver validation and loading.

```

501 \newif\ifBKM@DvipdfmxOutlineOpen

```

```

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

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

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

```

```

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

```

3.1.6 Compatibility for hyperref

```

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

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

```

3.2 Driver for dvipdfm

```

607 < *dvipdfm>
608 \NeedsTeXFormat{LaTeX2e}
609 \ProvidesFile{bkm-dvipdfm.def}%
610   [2009/12/07 v1.7 bookmark driver for dvipdfm (HO)]%
611 \newcount\BKM@id
612 \BKM@id=\z@
613 \def\BKM@O{000}
614 \newif\ifBKM@sw
615 \newcommand*{\bookmark}[2][ ]{%
616   \if@filesw
617     \begingroup

```



```

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

```

```

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

```

```

742 \endgroup
743 \fi
744 }

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

750 </dvi>

```

3.3 Driver for VTeX

```

751 <vtx>
752 \NeedsTeXFormat{LaTeX2e}
753 \ProvidesFile{bkm-vtx.def}%
754 [2009/12/07 v1.7 bookmark driver for VTeX (HO)]%

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

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

763 \def\BKM@O{00}

764 \newif\ifBKM@sw

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

```

```

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

```

```

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

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

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

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

```

```

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

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

```

```

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

```

3.4 Driver for pdfTeX

```

1008 <*pdfTeX>
1009 \NeedsTeXFormat{LaTeX2e}
1010 \ProvidesFile{bkm-pdfTeX.def}%
1011   [2009/12/07 v1.7 bookmark driver for pdfTeX (H0)]%
1012 \def\BKM@D0@entry#1#2{%
1013   \begingroup
1014     \setkeys{BKM@D0}{#1}%
1015     \def\BKM@D0@title{#2}%
1016     \BKM@UnescapeHex\BKM@D0@title
1017     \expandafter\expandafter\expandafter\BKM@getx
1018     \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1019     \let\BKM@attr\@empty
1020     \ifx\BKM@D0@flags\@empty
1021     \else
1022       \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1023     \fi
1024     \ifx\BKM@D0@color\@empty
1025     \else
1026       \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1027     \fi
1028     \ifx\BKM@attr\@empty
1029     \else
1030       \edef\BKM@attr{attr{\BKM@attr}}%
1031     \fi
1032     \let\BKM@action\@empty
1033     \ifx\BKM@D0@goto\@empty
1034       \ifx\BKM@D0@dest\@empty
1035         \ifx\BKM@D0@named\@empty
1036           \ifx\BKM@D0@rawaction\@empty
1037             \ifx\BKM@D0@uri\@empty
1038               \ifx\BKM@D0@page\@empty
1039                 \PackageError{bookmark}{Missing action}\@ehc
1040                 \edef\BKM@action{goto page1{/Fit}}%
1041               \else
1042                 \ifx\BKM@D0@view\@empty
1043                   \def\BKM@D0@view{Fit}%
1044                 \fi

```

```

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

```

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

```

1105 \def\BKM@DefGotoNameAction#1#2{%

```



```

1106 \BKM@EscapeString\BKM@D0@dest
1107 \edef#1{goto name{#2}}%
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 [2009/12/07 v1.7 bookmark driver for dvips (HO)]%

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 [2009/12/07 v1.7 bookmark driver for dvipsone (HO)]%

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 [2009/12/07 v1.7 bookmark driver for textures (HO)]%

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

```

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

```

1139 \def\BKM@pdfmark@out{%
1140 \if@files
1141 \newwrite\BKM@file
1142 \immediate\openout\BKM@file=\BKM@filename\relax
1143 \BKM@write{\@percentchar!}%
1144 \BKM@write{/pdfmark where{pop}}%
1145 \BKM@write{%
1146 {%
1147 /globaldict where{pop globaldict}{userdict}ifelse%
1148 /pdfmark/cleartomark load put%
1149 }%
1150 }%
1151 \BKM@write{ifelse}%

```

```

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

```

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.

```

1160 \def\BKM@DO@entry#1#2{%
1161   \begingroup
1162     \setkeys{BKM@DO}{#1}%
1163     \def\BKM@DO@title{#2}%
1164     \BKM@UnescapeHex\BKM@DO@title
1165     \expandafter\expandafter\expandafter\BKM@getx
1166     \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1167     \let\BKM@attr\@empty
1168     \ifx\BKM@DO@flags\@empty
1169       \else
1170         \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1171       \fi
1172     \ifx\BKM@DO@color\@empty
1173       \else
1174         \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1175       \fi
1176     \let\BKM@action\@empty
1177     \ifx\BKM@DO@goto\@empty
1178       \ifx\BKM@DO@dest\@empty
1179         \ifx\BKM@DO@named\@empty
1180           \ifx\BKM@DO@rawaction\@empty
1181             \ifx\BKM@DO@uri\@empty
1182               \ifx\BKM@DO@page\@empty
1183                 \PackageError{bookmark}{Missing action}\@ehc
1184                 \edef\BKM@action{%
1185                   /Action/GoTo%
1186                   /Page 1%
1187                   /View[/Fit]%
1188                 }%
1189               \else
1190                 \ifx\BKM@DO@view\@empty
1191                   \def\BKM@DO@view{Fit}%
1192                 \fi
1193                 \edef\BKM@action{%
1194                   /Action/GoTo%
1195                   /Page \BKM@DO@page
1196                   /View[/\BKM@DO@view]%
1197                 }%
1198               \fi
1199             \else
1200               \BKM@UnescapeHex\BKM@DO@uri
1201               \BKM@EscapeString\BKM@DO@uri
1202               \edef\BKM@action{%
1203                 /Action<<%
1204                 /Subtype/URI%
1205                 /URI(\BKM@DO@uri)%
1206                 >>%
1207               }%
1208             \fi
1209           \else
1210             \BKM@UnescapeHex\BKM@DO@rawaction

```

```

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

```

```
1273 }
1274 </pdfmark>
```

3.6 Common part for pdftex and pdfmark

```
1275 < *pdftex | pdfmark >
```

3.6.1 Write auxiliary file

```
1276 \RequirePackage{auxhook}
1277 \AddLineBeginMainAux{%
1278   \string\providecommand\string\BKM@entry[2]{}%
1279 }

1280 \newcount\BKM@id
1281 \BKM@id=\z@

1282 \def\BKM@O{000}

1283 \newif\ifBKM@sw

1284 \newcommand*{\bookmark}[2][ ]{%
1285   \if@filesw
1286     \begingroup
1287       \bookmarksetup{#1}%
1288       \ifBKM@keeplevel
1289       \else
1290         \xdef\BKM@currentlevel{\BKM@level}%
1291       \fi
1292       \edef\BKM@prev{\the\BKM@id}%
1293       \global\advance\BKM@id\@ne
1294       \BKM@swtrue
1295       \@whiles\ifBKM@sw\fi{%
1296         \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1297           \global\BKM@startatrootfalse
1298           \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1299             0{\BKM@level}0%
1300           }%
1301           \BKM@swfalse
1302         \else
1303           \expandafter\expandafter\expandafter\BKM@getx
1304             \csname BKM@\BKM@prev\endcsname
1305           \ifnum\BKM@level>\BKM@x@level\relax
1306             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1307               {\BKM@prev}{\BKM@level}0%
1308             }%
1309             \ifnum\BKM@prev>\z@
1310               \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1311               \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1312                 {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1313               }%
1314             \fi
1315             \BKM@swfalse
1316           \else
1317             \let\BKM@prev\BKM@x@parent
1318           \fi
1319         \fi
1320       }%
1321       \pdfstringdef\BKM@title{#2}%
1322       \edef\BKM@FLAGS{\BKM@PrintStyle}%
1323       \csname BKM@HypDestOptHook\endcsname
1324       \BKM@EscapeHex\BKM@dest
1325       \BKM@EscapeHex\BKM@uri
1326       \BKM@EscapeHex\BKM@goto
1327       \BKM@EscapeHex\BKM@rawaction
1328       \BKM@EscapeHex\BKM@title
```

```

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

1353 \def\BKM@getx#1#2#3{%
1354   \def\BKM@x@parent{#1}%
1355   \def\BKM@x@level{#2}%
1356   \def\BKM@x@childs{#3}%
1357 }

1358 \def\BKM@auxentry#1{%
1359   \expandafter\ifx\csname BKM@#1\endcsname\@empty
1360   \else
1361     ,#1={\csname BKM@#1\endcsname}%
1362   \fi
1363 }

```

3.6.2 Read auxiliary data

```

1364 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1365 \DeclareStringOption[0]{id}
1366 \DeclareBoolOption{open}
1367 \DeclareStringOption{flags}
1368 \DeclareStringOption{color}
1369 \DeclareStringOption{dest}
1370 \DeclareStringOption{named}
1371 \DeclareStringOption{uri}
1372 \DeclareStringOption{goto}
1373 \DeclareStringOption{page}
1374 \DeclareStringOption{view}
1375 \DeclareStringOption{rawaction}

1376 \AtBeginDocument{%
1377   \let\BKM@entry\BKM@DO@entry
1378 }

1379 </pdfTeX | pdfmark>

```

3.7 Option atend

3.7.1 Hook

```

1380 <*package>

1381 \ifBKM@atend
1382 \else

```

```

\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
given.
1383 \newcommand{\BookmarkAtEnd}[1]{%
1384 \PackageWarning{bookmark}{%
1385 Ignored, because option ‘atend’ is missing%
1386 }%
1387 }%

1388 \expandafter\endinput
1389 \fi

\BookmarkAtEnd

1390 \newcommand*{\BookmarkAtEnd}{%
1391 \g@addto@macro\BKM@EndHook
1392 }

1393 \let\BKM@EndHook\@empty
1394 \</package>

```

3.7.2 Drivers using hooks at end of document

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

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

```

1395 <*pdftex | pdfmark>
1396 \ifBKM@atend
1397 \AfterLastShipout{%
1398 \BKM@EndHook
1399 }%
1400 \fi
1401 </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^AT_EX runs are necessary.

```

1402 <*dvi pdfm | vtex>
1403 \ifBKM@atend
1404 \RequirePackage{atendddvi}%
1405 \AtEndDvi{\BKM@EndHook}%
1406 \fi
1407 </dvi pdfm | vtex>

```

4 Installation

4.1 Download

Package. This package is available on CTAN¹:

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

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

¹<http://ftp.ctan.org/tex-archive/>

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

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

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

4.2 Bundle installation

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

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

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

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

4.3 Package installation

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

```
tex bookmark.dtx
```

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

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

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

4.4 Refresh file name databases

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

4.5 Some details for the interested

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

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

Unpacking with L^AT_EX. The .dtx chooses its action depending on the format:

plain-T_EX: Run docstrip and extract the files.

L^AT_EX: Generate the documentation.

If you insist on using L^AT_EX for docstrip (really, docstrip does not need L^AT_EX), 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^AT_EX:

```
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 ϵ -TeX removed.

[2007/04/09 v0.8]

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

[2007/04/25 v0.9]

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

[2007/05/29 v1.0]

- Bug fix in code for second parameter of XYZ.

[2007/07/13 v1.1]

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

[2007/09/25 v1.2]

- `pdfmark` driver respects `\nofiles`.

[2008/08/08 v1.3]

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

[2008/09/13 v1.4]

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

[2009/08/13 v1.5]

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

[2009/12/06 v1.6]

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

[2009/12/07 v1.7]

- Use of package `atveryend` fixed.

6 Index

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

Symbols		
\"	33	\bitsetReset 254
\(938, 945	\bitsetSet 257, 264
\)	939, 955	\BKM@ 613, 763, 1282
\@ReturnafterFi	1006	\BKM@@@PatchHyperrefOption . 243, 245
\@bookmarksopenlevel	174	\BKM@@CalcParam 436, 438
\@car	189, 324, 338	\BKM@@CheckRect 357, 359
\@ehc	288, 328,	\BKM@@CheckXYZ 398, 400
	527, 556, 566, 657, 808, 1039, 1183	\BKM@@PatchHyperrefOption .. 240, 242
\@empty	121, 127, 133, 184,	\BKM@abslevel . . 627, 631, 638, 640, 729
	275, 283, 293, 297, 345, 362,	\BKM@action 650, 658, 663,
	370, 378, 386, 404, 416, 426,	667, 675, 679, 685, 702, 705,
	436, 650, 651, 652, 653, 654,	708, 712, 739, 801, 809, 811,
	655, 656, 660, 693, 694, 699,	815, 823, 827, 836, 846, 849,
	732, 801, 802, 803, 804, 805,	852, 856, 866, 1032, 1040, 1045,
	806, 807, 839, 840, 843, 860,	1050, 1054, 1064, 1070, 1082,
	861, 879, 896, 1018, 1019, 1020,	1086, 1090, 1095, 1100, 1176,
	1024, 1028, 1032, 1033, 1034,	1184, 1193, 1202, 1211, 1219,
	1035, 1036, 1037, 1038, 1042,	1229, 1242, 1249, 1255, 1258, 1270
	1073, 1074, 1079, 1166, 1167,	\BKM@attr
	1168, 1172, 1176, 1177, 1178,	. 1019, 1022, 1026, 1028, 1030,
	1179, 1180, 1181, 1182, 1190,	1100, 1167, 1170, 1174, 1266, 1268
	1235, 1236, 1239, 1266, 1359, 1393	\BKM@auxentry . . . 1337, 1338, 1339,
\@firstofone	435, 928	1340, 1341, 1342, 1343, 1344, 1358
\@gobble	340, 596, 597, 598, 1153	\BKM@CalcExpr 103,
\@gobbletwo	1154	113, 221, 577, 638, 697, 1077, 1310
\@ifundefined	187, 440	\BKM@CalcParam 352,
\@mainaux	1329	366, 374, 382, 390, 409, 421, 433
\@ne	476, 624, 774, 1293	\BKM@CalcResult . . 577, 578, 1310, 1312
\@nil	189, 299, 301, 307,	\BKM@CheckParam 307, 310, 313, 316, 343
	310, 313, 316, 331, 343, 357,	\BKM@CheckRect 319, 356
	359, 398, 400, 436, 438, 863, 895	\BKM@CheckView 295, 298
\@onelevel@sanitize		\BKM@CheckViewType 299, 301
	188, 303, 335, 403, 415, 432	\BKM@CheckXYZ 322, 397
\@percentchar	1143	\BKM@color 273, 275, 732, 734, 860, 863
\@whilesw	626, 776, 1295	\BKM@currentlevel . 217, 221, 223,
\\	935	574, 577, 581, 583, 621, 771, 1290
\/	934	\BKM@DefGotoNameAction .. 1070, 1105
Numbers		\BKM@DefineDriverKey . . . 457, 465,
\0	940, 965	466, 467, 468, 469, 470, 471, 472
\1	941, 975	\BKM@depth . . . 178, 180, 185, 215, 586
\2	942, 985	\BKM@dest 652, 684, 688, 693, 704, 705,
\3	943, 995	803, 835, 836, 839, 848, 849, 1324
A		\BKM@DisableOptions 454, 461, 481, 500
\AddLineBeginMainAux	1277	\BKM@DO@color .. 1024, 1026, 1172, 1174
\advance	106, 624, 774, 906, 915, 1293	\BKM@DO@dest
\AfterLastShipout	1138, 1397	. 1034, 1069, 1070, 1073, 1084,
\AtBeginDocument	1376	1085, 1086, 1106, 1178, 1227,
\AtEndDvi	1405	1228, 1231, 1235, 1247, 1248, 1250
B		\BKM@DO@entry .. 1012, 1154, 1160, 1377
\begin	19, 22	\BKM@DO@flags .. 1020, 1022, 1168, 1170
\belowpdfbookmark	580	\BKM@DO@gotor 1033, 1088,
\bitsetClear	259, 266	1089, 1094, 1177, 1253, 1254, 1257
\bitsetGetDec	270	\BKM@DO@id 1018, 1166
		\BKM@DO@named
		1035, 1063, 1065, 1179, 1218, 1222

\BKM@DO@page	\BKM@PatchHyperrefOption
. 1038, 1045, 1074, 1075, 1077, 239, 251, 252, 253
1082, 1182, 1195, 1236, 1237, 1243	\BKM@pdfmark@out
\BKM@DO@rawaction	1138, 1139
1036, 1053, 1057, 1180, 1210, 1213	\BKM@prev 623, 628, 636, 640, 644, 773,
\BKM@DO@title	777, 786, 788, 790, 794, 1292,
1015, 1016, 1102, 1163, 1164, 1262	1296, 1304, 1307, 1309, 1311, 1317
\BKM@DO@uri	\BKM@PrintStyle .. 269, 649, 800, 1322
1049, 1050, 1181, 1200, 1201, 1205	\BKM@PSHeaderFile
\BKM@DO@view 1114, 1122, 1130, 1136
1043, 1045, 1079, 1080, 1082,	\BKM@rawaction 654, 675, 805, 823, 1327
1190, 1191, 1196, 1239, 1240, 1244	\BKM@RGBcolor 861, 879, 881,
\BKM@driver	896, 910, 911, 916, 917, 921, 924
459,	\BKM@SetDepth
487, 490, 493, 495, 510, 511,	201, 204, 208
515, 518, 520, 523, 532, 535,	\BKM@startatrootfalse . 629, 778, 1297
538, 543, 546, 549, 552, 562, 564	\BKM@swfalse
\BKM@DvipdfmxOutlineOpentruerue ... 506	... 633, 642, 783, 792, 1301, 1315
\BKM@endHook ... 1391, 1393, 1398, 1405	\BKM@swtrue
\BKM@entry	625, 775, 1294
1278, 1330, 1377	\BKM@temp
\BKM@EscapeHex	189, 190,
132, 1324, 1325, 1326, 1327, 1328	191, 192, 334, 335, 336, 337,
\BKM@EscapeName	360, 364, 372, 380, 388, 393,
..... 120, 678, 826, 1063, 1218	402, 403, 407, 414, 415, 419,
\BKM@EscapeString	509, 510, 513, 515, 520, 523,
..... 126, 666, 684, 704, 707,	530, 532, 538, 541, 543, 549, 552
814, 835, 848, 851, 1049, 1085,	\BKM@TestViewType
1089, 1106, 1201, 1228, 1248, 1254	304, 305,
\BKM@file	306, 309, 312, 315, 318, 321, 333
1141, 1142, 1158	\BKM@title
\BKM@filename	648, 731, 798, 886, 1321, 1328, 1348
1135, 1136, 1142	\BKM@toHexDigit
\BKM@FLAGS	912, 918, 927
649, 736,	\BKM@toRGB
737, 800, 883, 884, 1322, 1345, 1346	863, 895
\BKM@getx	\BKM@toRGBComponent 897, 898, 899, 901
635, 745,	\BKM@type
785, 891, 1017, 1165, 1303, 1353	302,
\BKM@gotor	303, 326, 336, 347, 394, 588, 589
651, 707, 711, 802, 851, 855, 1326	\BKM@UnescapeHex
\BKM@gtemp	138, 1016,
581, 583	1048, 1053, 1069, 1084, 1088,
\BKM@id	1164, 1200, 1210, 1227, 1247, 1253
611, 612,	\BKM@uri
623, 624, 630, 639, 761, 762,	655, 666, 670, 806, 814, 818, 1325
773, 774, 780, 789, 868, 1280,	\BKM@view
1281, 1292, 1293, 1298, 1306, 1331	297,
\BKM@level 221, 621, 631, 637,	329, 337, 354, 368, 376, 384,
640, 720, 771, 781, 787, 790,	392, 412, 424, 429, 660, 661,
871, 1290, 1299, 1305, 1307, 1333	663, 699, 700, 702, 843, 844, 846
\BKM@named 653, 678, 680, 804, 826, 830	\BKM@vtx@title
\BKM@nil	799
243, 245	\BKM@write
\BKM@null	1143,
. 405, 407, 417, 419, 427, 431, 432	1144, 1145, 1151, 1153, 1157,
\BKM@numberedfalse	1261, 1262, 1264, 1268, 1270, 1271
230	\BKM@x@abslevel
\BKM@numberedtrue	638, 748
227	\BKM@x@chids
\BKM@openlevel ... 174, 720, 871, 1333 1101, 1263, 1264, 1310, 1356
\BKM@page	\BKM@x@level
282, 283, 285, 286,	637, 747, 787, 893, 1305, 1312, 1355
289, 293, 656, 663, 694, 695,	\BKM@x@parent
697, 702, 807, 811, 840, 841, 846	644, 746, 794, 892, 1312, 1317, 1354
\BKM@param	\bookmark
183, 184,	15, 16, 26, 62, 63,
187, 188, 189, 198, 201, 204,	64, 65, 67, 71, 75, 79, 85, 86, 87,
344, 345, 350, 354, 361, 362,	88, 89, 94, 570, 600, 615, 765, 1284
363, 368, 369, 370, 371, 376,	\BookmarkAtEnd 5, 13, 1383, 1390
377, 378, 379, 384, 385, 386,	\BookmarkDriverDefault 485, 495
387, 392, 401, 402, 404, 405,	\bookmarksetup . 11, 14, 35, 40, 46,
412, 413, 414, 416, 417, 424,	52, 57, 61, 171, 248, 618, 768, 1287
425, 426, 427, 429, 436, 446, 448	
\BKM@parent	
779, 788, 867	

C

\c@tocdepth	175, 178, 185
\calc	73, 435, 439

\catcode	934, 935	\ifBKM@DO@open	1101, 1264
\chapternumberline	594, 598	\ifBKM@DvipdfmxOutlineOpen	501, 717
\chardef	476, 478	\ifBKM@keeplevel	619, 769, 1288
\count@	105, 106, 108, 211, 215	\ifBKM@numbered	234, 237, 591
\csname	102, 177, 204, 240, 256, 263, 474, 475, 503, 630, 636, 639, 780, 786, 789, 1018, 1166, 1298, 1304, 1306, 1311, 1323, 1359, 1361	\ifBKM@open	719, 870, 1332
\currentpdfbookmark	573	\ifBKM@startatroot	628, 777, 1296
		\ifBKM@sw	614, 626, 764, 776, 1283, 1295
		\ifcase	190, 928
		\ifdim	903, 904
		\iffalse	231, 237
		\ifHy@bookmarksnumbered	225, 228, 231
		\ifHy@bookmarksopen	172
		\ifnum	191, 192, 286, 393, 505, 586, 628, 637, 720, 736, 777, 787, 871, 883, 1263, 1296, 1305, 1309, 1333, 1345
		\ifpdf	486, 514
		\iftrue	228, 234, 256, 263
		\ifvtx	492, 542
		\ifvtexpdf	755
		\ifx	102, 121, 127, 133, 177, 184, 190, 256, 263, 283, 336, 345, 362, 370, 378, 386, 404, 407, 416, 419, 426, 439, 474, 503, 510, 515, 523, 532, 543, 552, 589, 651, 652, 653, 654, 655, 656, 660, 693, 694, 699, 732, 802, 803, 804, 805, 806, 807, 839, 840, 843, 860, 879, 1020, 1024, 1028, 1033, 1034, 1035, 1036, 1037, 1038, 1042, 1073, 1074, 1079, 1168, 1172, 1177, 1178, 1179, 1180, 1181, 1182, 1190, 1235, 1236, 1239, 1266, 1359
		\ifxetex	489, 531
		\immediate	1142, 1158, 1329
		\InputIfFileExists	484, 562
</			

