

The bookmark package

Heiko Oberdiek
<heiko.oberdiek at googlemail.com>

2011/12/02 v1.24

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	3
1.1	Introduction	3
1.2	Options	3
1.2.1	Options <code>draft</code> and <code>final</code>	3
1.2.2	Driver options	4
1.2.3	Layout options	4
1.2.4	Action options	4
1.2.5	Level options	5
1.2.6	Style definitions	6
1.2.7	Hook support	6
1.3	Compatibility with <code>hyperref</code>	7
1.4	Adding bookmarks at the end	7
1.5	Limitations/Todos	8
2	Example	8
3	Implementation	10
3.1	Package	10
3.1.1	Requirements	10
3.1.2	Package options	11
3.1.3	Action options	15
3.1.4	Option <code>atend</code>	19
3.1.5	Option <code>style</code>	19
3.1.6	Options for source file location	20
3.1.7	Hook support	20
3.1.8	Driver setup and loading	21
3.1.9	Compatibility for <code>hyperref</code>	23
3.2	Driver for <code>dvipdfm</code>	24
3.3	Driver for <code>VT_EX</code>	27
3.4	Driver for <code>pdfT_EX</code>	31
3.5	Drivers with <code>pdfmark</code> specials	34
3.5.1	Driver <code>dvips</code>	34
3.5.2	Driver <code>dvipsone</code>	34
3.5.3	Driver <code>textures</code>	34
3.5.4	Common part	34
3.6	Common part for <code>pdftex</code> and <code>pdfmark</code>	37

3.6.1	Write auxiliary file	37
3.6.2	Read auxiliary data	39
3.7	Option <code>atend</code>	40
3.7.1	Hook	40
3.7.2	Drivers using hooks at end of document	40
3.7.3	Drivers using <code>\AtEndDvi</code>	40
4	Installation	41
4.1	Download	41
4.2	Bundle installation	41
4.3	Package installation	41
4.4	Refresh file name databases	42
4.5	Some details for the interested	42
5	Catalogue	42
6	References	43
7	History	43
	[2007/02/19 v0.1]	43
	[2007/02/20 v0.2]	43
	[2007/02/21 v0.3]	43
	[2007/02/22 v0.4]	43
	[2007/03/02 v0.5]	43
	[2007/03/03 v0.6]	43
	[2007/03/07 v0.7]	43
	[2007/04/09 v0.8]	44
	[2007/04/25 v0.9]	44
	[2007/05/29 v1.0]	44
	[2007/07/13 v1.1]	44
	[2007/09/25 v1.2]	44
	[2008/08/08 v1.3]	44
	[2008/09/13 v1.4]	44
	[2009/08/13 v1.5]	44
	[2009/12/06 v1.6]	44
	[2009/12/07 v1.7]	44
	[2009/12/17 v1.8]	44
	[2010/03/30 v1.9]	45
	[2010/04/03 v1.10]	45
	[2010/04/04 v1.11]	45
	[2010/04/08 v1.12]	45
	[2010/07/23 v1.13]	45
	[2010/09/02 v1.14]	45
	[2010/09/25 v1.15]	45
	[2010/10/19 v1.16]	45
	[2010/10/25 v1.17]	45
	[2010/11/05 v1.18]	45
	[2011/03/20 v1.19]	45
	[2011/04/13 v1.20]	46
	[2011/04/21 v1.21]	46
	[2011/05/13 v1.22]	46
	[2011/09/19 v1.23]	46
	[2011/12/02 v1.24]	46
8	Index	46

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` [1] 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 four 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. `\bookmarksetupnext{<options>}`
The options are stored and called after the options of the next `\bookmark` command.
4. `\bookmark[<options>]{<title>}`
This command sets the bookmark. The option settings remain limited to this bookmark.

Exception: Driver options, option `atend` and options `draft/final` cannot be changed after the package is loaded.

1.2.1 Options `draft` and `final`

If a \LaTeX file is compiled several times, then a little time can be saved, if option `draft` is used to disable the bookmark stuff of this package. Default is `final`. Both options are boolean options, without value the value `true` is used. `draft=true` is the same as `final=false`.

Options of package `bookmark` are local options with the exception of driver options. Therefore `draft` or `final` given as class option is not seen by this package. If you want to optimize first \LaTeX runs depending on a global `draft`, then package `ifdraft` and \LaTeX 's `\PassOptionsToPackage` might help in the organization of the preamble, for example:

```

\documentclass[draft]{article}
\usepackage{ifdraft}
\ifdraft{%
  \PassOptionsToPackage{draft}{bookmark}%
}{%
}

```

1.2.2 Driver options

Supported drivers are `pdftex`, `dvips`, `dvipsone`, `textures`, `dvipdfm` (`xetex`), and `vtex`. The $\text{T}_{\text{E}}\text{X}$ engines `pdf $\text{T}_{\text{E}}\text{X}$` , `X $\text{T}_{\text{E}}\text{X}$` , and `V $\text{T}_{\text{E}}\text{X}$` 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
```

1.2.3 Layout 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.

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.

1.2.4 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

Missing actions. If the action is missing package `bookmark` throws an error message. Depending on the driver (`pdftex`, `dvips` and friends) the package detects it quite late at the end of the document. Since version 2011/04/21 v1.21 the package tries printing the line number and file name of the corresponding occurrence of `\bookmark`. However, TeX does provide the line number, but unhappily the file name is a secret. The package supports some ways to get the file name:

- If LuaTeX (independently from DVI or PDF modus) is running, then its `status.filename` is used automatically.
- Package `\currfile` [2] redefines L^AT_EX internals to keep track of the file name. If the package is loaded, then its `\currfilepath` is detected and used automatically by package `bookmark`.
- The file name can be set manually by option `scrfile` in `\bookmarksetup` or `\bookmark`. But be careful, manual setting disables the previous ways for file name detection. And a wrong or missed file name setting might get you a wrong source location in the error message.

1.2.5 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. Since version 2010/10/19 v1.16 package `bookmark` also supports names `part`, `section` and other, if the macros `\toclevel@part`, `\toclevel@section` are defined (done by package `hyperref`, see option `bookmarkdepth`).

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}
```

1.2.6 Style definitions

A style is a group of option settings. It can be defined by macro `\bookmarkdefinestyle` and is used by option `style`.

<code>\bookmarkdefinestyle {<name>} {<key value list>}</code>

The *<key value list>* of option settings is assigned the style *<name>*.

style: The value of option `style` is the name of a previously defined style. Its option settings are now executed. The options may include option `style`. Endless recursion by calling the same style recursively is prevented and throws an error.

1.2.7 Hook support

A hook is called right after the processing the optional options of macro `\bookmark`.

addtohook: Code, given as value to this option is added to the hook.

<code>\bookmarkget {<option>}</code>
--

Macro `\bookmarkget` extracts the value of the latest option setting of option *<option>*. In case of boolean options number one is returned, if the boolean option is enabled, otherwise the result is zero. The resulting numbers can directly be used in `\ifnum` or `\ifcase`. If you want to have the digits 0 and 1, then prefix `\bookmarkget` with `\number`. Macro `\bookmarkget` is expandable. In case of unsupported options an empty string is returned. Supported boolean options are

`bold`, `italic`, `open`

Other supported options:

depth, dest, color, gotor, level, named, openlevel, page, rawaction, uri,
view,

Additionally the following key is available:

text

It returns the text of the outline entry.

Option setting. Inside the hook an option can be set using `\bookmarksetup`.

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`:

hyperref	bookmark
<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}%  
}
```

Alternatively, option `startatroot` can be given in `\bookmark`:

```
\BookmarkAtEnd{%  
  \bookmark[  
    startatroot,  
    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 \LaTeX 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}[2011/12/02]
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   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 [2011/12/02 v1.24 PDF bookmarks (HO)]%
```

3.1.1 Requirements

-**T_EX**.

\BKM@CalcExpr

```
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 pdfT_EX.

```
119 \RequirePackage{pdfescape}[2007/03/20]
```

\BKM@EscapeName

```
120 \def\BKM@EscapeName#1{%
121   \ifx#1\@empty
122   \else
123     \EdefEscapeName#1#1%
124   \fi
125 }%
```

\BKM@EscapeString

```
126 \def\BKM@EscapeString#1{%
127   \ifx#1\@empty
128   \else
129     \EdefEscapeString#1#1%
130   \fi
131 }%
```

\BKM@EscapeHex

```
132 \def\BKM@EscapeHex#1{%
133   \ifx#1\@empty
134   \else
135     \EdefEscapeHex#1#1%
136   \fi
137 }%
```

\BKM@UnescapeHex

```
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{ifluatex}[2010/03/01]
145 \RequirePackage{pdftexcmds}[2010/11/04]
146 \RequirePackage{hyperref}[2010/06/18]
147 \RequirePackage{auxhook}[2007/04/06]
148 \RequirePackage{kvsetkeys}[2010/03/01]
149 \RequirePackage{kvoptions}[2009/08/13]
150 \RequirePackage{hycolor}[2008/09/08]
151 \RequirePackage{bitset}[2011/01/30]
152 \RequirePackage{ltxcmds}[2011/04/14]
```

3.1.2 Package options

```
153 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
154 \DeclareLocalOptions{%
155   atend,%
156   bold,%
157   color,%
158   depth,%
159   dest,%
160   draft,%
161   final,%
162   gotor,%
163   italic,%
164   keeplevel,%
165   level,%
166   named,%
167   numbered,%
168   open,%
169   openlevel,%
170   page,%
171   rawaction,%
172   rellevel,%
173   srcfile,%
174   srcline,%
175   startatroot,%
176   uri,%
177   view,%
178 }
```

\bookmarksetup

```
179 \newcommand*{\bookmarksetup}{\kvsetkeys{BKM}}
```

\BKM@setup

```
180 \def\BKM@setup#1{%
181   \bookmarksetup{#1}%
182   \ifx\BKM@HookNext\ltx@empty
183   \else
184     \expandafter\bookmarksetup\expandafter{\BKM@HookNext}%
185     \BKM@HookNextClear
186   \fi
187   \BKM@hook
188   \ifBKM@keeplevel
189   \else
190     \xdef\BKM@currentlevel{\BKM@level}%
191   \fi
192 }
```

\bookmarksetupnext

```

193 \newcommand*{\bookmarksetupnext}[1]{%
194   \ltx@GlobalAppendToMacro\BKM@HookNext{,#1}%
195 }

\BKM@setupnext

\BKM@HookNextClear

196 \def\BKM@HookNextClear{%
197   \global\let\BKM@HookNext\ltx@empty
198 }

\BKM@HookNext

199 \BKM@HookNextClear

200 \DeclareBoolOption{draft}
201 \DeclareComplementaryOption{final}{draft}

\BKM@DisableOptions

202 \def\BKM@DisableOptions{%
203   \DisableKeyvalOption[action=warning,package=bookmark]%
204     {BKM}{draft}%
205   \DisableKeyvalOption[action=warning,package=bookmark]%
206     {BKM}{final}%
207 }

208 \DeclareBoolOption[\ifHy@bookmarksopen true\else false\fi]{open}

\bookmark@open

209 \def\bookmark@open{%
210   \ifBKM@open\ltx@one\else\ltx@zero\fi
211 }

212 \DeclareStringOption[\maxdimen]{openlevel}

\BKM@openlevel

213 \edef\BKM@openlevel{\number\@bookmarksopenlevel}

214 %\DeclareStringOption[\c@tocdepth]{depth}
215 \ltx@ifundefined{Hy@bookmarksdepth}{%
216   \def\BKM@depth{\c@tocdepth}%
217 }{%
218   \let\BKM@depth\Hy@bookmarksdepth
219 }
220 \define@key{BKM}{depth}[]{%
221   \edef\BKM@param{#1}%
222   \ifx\BKM@param\@empty
223     \def\BKM@depth{\c@tocdepth}%
224   \else
225     \ltx@ifundefined{toclevel@BKM@param}{%
226       \@onelevel@sanitize\BKM@param
227       \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
228       \ifcase 0\expandafter\ifx\BKM@temp-1\fi
229         \expandafter\ifnum\expandafter`\BKM@temp>47 %
230           \expandafter\ifnum\expandafter`\BKM@temp<58 %
231             1%
232           \fi
233         \fi
234         \relax
235       \PackageWarning{bookmark}{%
236         Unknown document division name (\BKM@param)\MessageBreak
237         for option `depth'%
238       }%
239     \else

```

```

240      \BKM@SetDepthOrLevel\BKM@depth\BKM@param
241      \fi
242    }{%
243      \BKM@SetDepthOrLevel\BKM@depth{%
244        \csname toplevel@\BKM@param\endcsname
245      }%
246    }%
247  \fi
248 }

```

\bookmark@depth

```

249 \def\bookmark@depth{\BKM@depth}

```

\BKM@SetDepthOrLevel

```

250 \def\BKM@SetDepthOrLevel#1#2{%
251   \begingroup
252     \setbox\z@=\hbox{%
253       \count@=#2\relax
254     \expandafter
255   }%
256   \expandafter\endgroup
257   \expandafter\def\expandafter#1\expandafter{\the\count@}%
258 }

259 \DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
260 \define@key{BKM}{level}{%
261   \edef\BKM@param{#1}%
262   \ifx\BKM@param\BKM@MacroCurrentLevel
263     \let\BKM@level\BKM@param
264   \else
265     \ltx@ifundefined{toplevel@\BKM@param}{%
266       \@onelevel@sanitize\BKM@param
267       \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
268       \ifcase 0\expandafter\ifx\BKM@temp-1\fi
269         \expandafter\ifnum\expandafter`\BKM@temp>47 %
270           \expandafter\ifnum\expandafter`\BKM@temp<58 %
271             1%
272           \fi
273         \fi
274       \relax
275       \PackageWarning{bookmark}{%
276         Unknown document division name (\BKM@param)\MessageBreak
277         for option `level'%
278       }%
279     \else
280       \BKM@SetDepthOrLevel\BKM@level\BKM@param
281     \fi
282   }{%
283     \BKM@SetDepthOrLevel\BKM@level{%
284       \csname toplevel@\BKM@param\endcsname
285     }%
286   }%
287 \fi
288 }

```

\BKM@MacroCurrentLevel

```

289 \def\BKM@MacroCurrentLevel{\BKM@currentlevel}

290 \DeclareBoolOption{keeplevel}
291 \DeclareBoolOption{startatroot}

```

\BKM@startatrootfalse

```

292 \def\BKM@startatrootfalse{%
293   \global\let\ifBKM@startatroot\iffalse
294 }

\BKM@startatroottrue

295 \def\BKM@startatroottrue{%
296   \global\let\ifBKM@startatroot\iftrue
297 }

298 \define@key{BKM}{rellevel}{%
299   \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
300 }

\bookmark@level

301 \def\bookmark@level{\BKM@level}

\BKM@currentlevel

302 \def\BKM@currentlevel{0}

```

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

```

303 \DeclareBoolOption{%
304   \ifHy@bookmarksnumbered true\else false\fi
305 }{numbered}
306 \g@addto@macro\BKM@numberedtrue{%
307   \let\ifHy@bookmarksnumbered\iftrue
308 }
309 \g@addto@macro\BKM@numberedfalse{%
310   \let\ifHy@bookmarksnumbered\iffalse
311 }
312 \g@addto@macro\Hy@bookmarksnumberedtrue{%
313   \let\ifBKM@numbered\iftrue
314 }
315 \g@addto@macro\Hy@bookmarksnumberedfalse{%
316   \let\ifBKM@numbered\iffalse
317 }

\bookmark@numbered

318 \def\bookmark@numbered{%
319   \ifBKM@numbered\ltx@one\else\ltx@zero\fi
320 }

```

Redefinitions `hyperref's` options

```

\BKM@PatchHyperrefOption

321 \def\BKM@PatchHyperrefOption#1{%
322   \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
323 }

\BKM@@PatchHyperrefOption

324 \def\BKM@@PatchHyperrefOption#1{%
325   \expandafter\BKM@@@PatchHyperrefOption#1{##1}\BKM@nil#1%
326 }

\BKM@@@PatchHyperrefOption

327 \def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
328   \def#2##1{%
329     #1%
330     \bookmarksetup{#3={##1}}%
331   }%
332 }

333 \BKM@PatchHyperrefOption{bookmarksopen}{open}
334 \BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
335 \BKM@PatchHyperrefOption{bookmarksdepth}{depth}

```

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

```

336 \bitsetReset{BKM@FontStyle}%
337 \define@key{BKM}{italic}[true]{%
338   \expandafter\ifx\csname if#1\endcsname\iftrue
339     \bitsetSet{BKM@FontStyle}{0}%
340   \else
341     \bitsetClear{BKM@FontStyle}{0}%
342   \fi
343 }%
344 \define@key{BKM}{bold}[true]{%
345   \expandafter\ifx\csname if#1\endcsname\iftrue
346     \bitsetSet{BKM@FontStyle}{1}%
347   \else
348     \bitsetClear{BKM@FontStyle}{1}%
349   \fi
350 }%
```

\bookmark@italic

```

351 \def\bookmark@italic{%
352   \ifnum\bitsetGet{BKM@FontStyle}{0}=1 \ltx@one\else\ltx@zero\fi
353 }
```

\bookmark@bold

```

354 \def\bookmark@bold{%
355   \ifnum\bitsetGet{BKM@FontStyle}{1}=1 \ltx@one\else\ltx@zero\fi
356 }
```

\BKM@PrintStyle

```

357 \def\BKM@PrintStyle{%
358   \bitsetGetDec{BKM@FontStyle}%
359 }%
```

Options for color.

```

360 \define@key{BKM}{color}{%
361   \HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}%
362 }
```

\BKM@color

```

363 \let\BKM@color\@empty
```

\bookmark@color

```

364 \def\bookmark@color{\BKM@color}
```

3.1.3 Action options

```

365 \def\BKM@temp#1{%
366   \DeclareStringOption{#1}%
367   \expandafter\edef\csname bookmark@#1\endcsname{%
368     \expandafter\noexpand\csname BKM@#1\endcsname
369   }%
370 }
```

\bookmark@dest

```

371 \BKM@temp{dest}
```

\bookmark@named

```

372 \BKM@temp{named}
```

\bookmark@uri

```

373 \BKM@temp{uri}
```

```

\bookmark@gotor
374 \BKM@temp{gotor}

\bookmark@rawaction
375 \BKM@temp{rawaction}

376 \define@key{BKM}{page}{%
377   \def\BKM@page{#1}%
378   \ifx\BKM@page\@empty
379   \else
380     \edef\BKM@page{\number\BKM@page}%
381     \ifnum\BKM@page>\z@
382     \else
383       \PackageError{bookmark}{Page must be positive}\@ehc
384     \def\BKM@page{1}%
385   \fi
386 \fi
387 }

\BKM@page
388 \let\BKM@page\@empty

\bookmark@page
389 \def\bookmark@page{\BKM@page}

390 \define@key{BKM}{view}{%
391   \BKM@CheckView{#1}%
392 }

\BKM@view
393 \let\BKM@view\@empty

\bookmark@view
394 \def\bookmark@view{\BKM@view}

BKM@CheckView
395 \def\BKM@CheckView#1{%
396   \BKM@CheckViewType#1 \@nil
397 }

\BKM@CheckViewType
398 \def\BKM@CheckViewType#1 #2\@nil{%
399   \def\BKM@type{#1}%
400   \@onelevel@sanitize\BKM@type
401   \BKM@TestViewType{Fit}{}%
402   \BKM@TestViewType{FitB}{}%
403   \BKM@TestViewType{FitH}{%
404     \BKM@CheckParam#2 \@nil{top}%
405   }%
406   \BKM@TestViewType{FitBH}{%
407     \BKM@CheckParam#2 \@nil{top}%
408   }%
409   \BKM@TestViewType{FitV}{%
410     \BKM@CheckParam#2 \@nil{bottom}%
411   }%
412   \BKM@TestViewType{FitBV}{%
413     \BKM@CheckParam#2 \@nil{bottom}%
414   }%
415   \BKM@TestViewType{FitR}{%
416     \BKM@CheckRect{#2}{ }%
417   }%
418   \BKM@TestViewType{XYZ}{%

```



```

419     \BKM@CheckXYZ{#2}{ }%
420 }%
421 \@car{%
422     \PackageError{bookmark}{%
423         Unknown view type `\'BKM@type',\MessageBreak
424         using `FitH' instead%
425     }\@ehc
426     \def\BKM@view{FitH}%
427 }%
428 \@nil
429 }

```

\BKM@TestViewType

```

430 \def\BKM@TestViewType#1{%
431     \def\BKM@temp{#1}%
432     \@onelevel@sanitize\BKM@temp
433     \ifx\BKM@type\BKM@temp
434         \let\BKM@view\BKM@temp
435         \expandafter\@car
436     \else
437         \expandafter\@gobble
438     \fi
439 }

```

BKM@CheckParam

```

440 \def\BKM@CheckParam#1 #2\@nil#3{%
441     \def\BKM@param{#1}%
442     \ifx\BKM@param\@empty
443         \PackageWarning{bookmark}{%
444             Missing parameter (#3) for `\'BKM@type',\MessageBreak
445             using 0%
446         }%
447         \def\BKM@param{0}%
448     \else
449         \BKM@CalcParam
450     \fi
451     \edef\BKM@view{\BKM@view\space\BKM@param}%
452 }

```

BKM@CheckRect

```

453 \def\BKM@CheckRect#1#2{%
454     \BKM@@CheckRect#1#2#2#2\@nil
455 }

```

\BKM@@CheckRect

```

456 \def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
457     \def\BKM@temp{0}%
458     \def\BKM@param{#1}%
459     \ifx\BKM@param\@empty
460         \def\BKM@param{0}%
461         \def\BKM@temp{1}%
462     \else
463         \BKM@CalcParam
464     \fi
465     \edef\BKM@view{\BKM@view\space\BKM@param}%
466     \def\BKM@param{#2}%
467     \ifx\BKM@param\@empty
468         \def\BKM@param{0}%
469         \def\BKM@temp{1}%
470     \else
471         \BKM@CalcParam
472     \fi

```

```

473 \edef\BKM@view{\BKM@view\space\BKM@param}%
474 \def\BKM@param{#3}%
475 \ifx\BKM@param\@empty
476   \def\BKM@param{0}%
477   \def\BKM@temp{1}%
478 \else
479   \BKM@CalcParam
480 \fi
481 \edef\BKM@view{\BKM@view\space\BKM@param}%
482 \def\BKM@param{#4}%
483 \ifx\BKM@param\@empty
484   \def\BKM@param{0}%
485   \def\BKM@temp{1}%
486 \else
487   \BKM@CalcParam
488 \fi
489 \edef\BKM@view{\BKM@view\space\BKM@param}%
490 \ifnum\BKM@temp>\z@
491   \PackageWarning{bookmark}{Missing parameters for '\BKM@type'}%
492 \fi
493 }

```

\BKM@CheckXYZ

```

494 \def\BKM@CheckXYZ#1#2{%
495   \BKM@@CheckXYZ#1#2#2\@nil
496 }

```

\BKM@@CheckXYZ

```

497 \def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%
498   \def\BKM@param{#1}%
499   \let\BKM@temp\BKM@param
500   \@onelevel@sanitize\BKM@temp
501   \ifx\BKM@param\@empty
502     \let\BKM@param\BKM@null
503   \else
504     \ifx\BKM@temp\BKM@null
505     \else
506       \BKM@CalcParam
507     \fi
508   \fi
509   \edef\BKM@view{\BKM@view\space\BKM@param}%
510   \def\BKM@param{#2}%
511   \let\BKM@temp\BKM@param
512   \@onelevel@sanitize\BKM@temp
513   \ifx\BKM@param\@empty
514     \let\BKM@param\BKM@null
515   \else
516     \ifx\BKM@temp\BKM@null
517     \else
518       \BKM@CalcParam
519     \fi
520   \fi
521   \edef\BKM@view{\BKM@view\space\BKM@param}%
522   \def\BKM@param{#3}%
523   \ifx\BKM@param\@empty
524     \let\BKM@param\BKM@null
525   \fi
526   \edef\BKM@view{\BKM@view\space\BKM@param}%
527 }

```

\BKM@null

```

528 \def\BKM@null{null}
529 \@onelevel@sanitize\BKM@null

```

\BKM@CalcParam

```

530 \def\BKM@CalcParam{%
531   \begingroup
532   \let\calc@\firstofone
533   \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
534 }

```

\BKM@@CalcParam

```

535 \def\BKM@@CalcParam#1#2#3\@nil{%
536   \ifx\calc#1%
537     \ifundefined{calc@assign@dimen}{%
538       \ifundefined{dimexpr}{%
539         \setlength{\dimen@}{#2}%
540       }{%
541         \setlength{\dimen@}{\dimexpr#2\relax}%
542       }%
543     }{%
544       \setlength{\dimen@}{#2}%
545     }%
546     \dimen@.99626\dimen@
547     \edef\BKM@param{\strip@pt\dimen@}%
548     \expandafter\endgroup
549     \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
550   \else
551     \endgroup
552   \fi
553 }

```

3.1.4 Option atend

```

554 \DeclareBoolOption{atend}
555 \g@addto@macro\BKM@DisableOptions{%
556   \DisableKeyvalOption[action=warning,package=bookmark]%
557   {BKM}{atend}%
558 }

```

3.1.5 Option style

\bookmarkdefinestyle

```

559 \newcommand*{\bookmarkdefinestyle}[2]{%
560   \ifundefined{BKM@style@#1}{%
561     }{%
562       \PackageInfo{bookmark}{Redefining style `#1'}%
563     }%
564     \@namedef{BKM@style@#1}{#2}%
565 }

566 \define@key{BKM}{style}{%
567   \BKM@StyleCall{#1}%
568 }
569 \newif\ifBKM@ok

```

\BKM@StyleCall

```

570 \def\BKM@StyleCall#1{%
571   \ifundefined{BKM@style@#1}{%
572     \PackageError{bookmark}{%
573       Undefined style `#1'%
574     }\@ehc
575   }{%

```

Check style stack.

```

576   \BKM@oktrue
577   \edef\BKM@StyleCurrent{#1}%

```

```

578 \@onelevel@sanitize\BKM@StyleCurrent
579 \let\BKM@StyleEntry\BKM@StyleEntryCheck
580 \BKM@StyleStack
581 \ifBKM@ok
582 \expandafter\@firstofone
583 \else
584 \PackageError{bookmark}{%
585 Ignoring recursive call of style '\BKM@StyleCurrent'%
586 }\@ehc
587 \expandafter\@gobble
588 \fi
589 {%

```

Push current style on stack.

```

590 \let\BKM@StyleEntry\relax
591 \edef\BKM@StyleStack{%
592 \BKM@StyleEntry{\BKM@StyleCurrent}%
593 \BKM@StyleStack
594 }%

```

Call style.

```

595 \expandafter\expandafter\expandafter\bookmarksetup
596 \expandafter\expandafter\expandafter{%
597 \csname BKM@style@\BKM@StyleCurrent\endcsname
598 }%

```

Pop current style from stack.

```

599 \BKM@StyleStackPop
600 }%
601 }%
602 }

```

\BKM@StyleStackPop

```

603 \def\BKM@StyleStackPop{%
604 \let\BKM@StyleEntry\relax
605 \edef\BKM@StyleStack{%
606 \expandafter\@gobbletwo\BKM@StyleStack
607 }%
608 }

```

\BKM@StyleEntryCheck

```

609 \def\BKM@StyleEntryCheck#1{%
610 \def\BKM@temp{#1}%
611 \ifx\BKM@temp\BKM@StyleCurrent
612 \BKM@okfalse
613 \fi
614 }

```

\BKM@StyleStack

```

615 \def\BKM@StyleStack{}

```

3.1.6 Options for source file location

```

616 \DeclareStringOption{srcline}
617 \DeclareStringOption{srcfile}

```

3.1.7 Hook support

\BKM@hook

```

618 \def\BKM@hook{}

619 \define@key{BKM}{addtohook}{%
620 \ltx@LocalAppendToMacro\BKM@hook{#1}%
621 }

```

bookmarkget

```
622 \newcommand*{\bookmarkget}[1]{%
623   \romannumeral0%
624   \ltx@ifundefined{bookmark@#1}{%
625     \ltx@space
626   }{%
627     \expandafter\expandafter\expandafter\ltx@space
628     \csname bookmark@#1\endcsname
629   }%
630 }
```

3.1.8 Driver setup and loading

Driver detection.

\BKM@DefineDriverKey

```
631 \def\BKM@DefineDriverKey#1{%
632   \define@key{BKM}{#1}[]{%
633     \def\BKM@driver{#1}%
634   }%
635   \g@addto@macro\BKM@DisableOptions{%
636     \DisableKeyvalOption[action=warning,package=bookmark]%
637       {BKM}{#1}%
638   }%
639 }

640 \BKM@DefineDriverKey{pdftex}
641 \BKM@DefineDriverKey{dvips}
642 \BKM@DefineDriverKey{dvipsone}
643 \BKM@DefineDriverKey{textures}
644 \BKM@DefineDriverKey{dvi pdfm}
645 \BKM@DefineDriverKey{dvi pdfmx}
646 \BKM@DefineDriverKey{xetex}
647 \BKM@DefineDriverKey{vtex}
648 \define@key{BKM}{dvi pdfmx-outline-open}[true]{%
649   \expandafter\ifx\csname if#1\expandafter\endcsname
650     \csname iftrue\endcsname
651   \chardef\SpecialDvipdfmxOutlineOpen\@ne
652 } \else
653   \chardef\SpecialDvipdfmxOutlineOpen\z@
654 } \fi
655 }
656 \g@addto@macro\BKM@DisableOptions{%
657   \DisableKeyvalOption{BKM}{dvi pdfmx-outline-open}%
658 }
```

\bookmark@driver

```
659 \def\bookmark@driver{\BKM@driver}

660 \InputIfFileExists{bookmark.cfg}{-}{-}
```

\BookmarkDriverDefault

```
661 \providecommand*\BookmarkDriverDefault}{dvips}
```

\BKM@driver

```
662 \ifpdf
663   \def\BKM@driver{pdftex}%
664 \else
665   \ifxetex
666     \def\BKM@driver{dvi pdfm}%
667   \else
668     \ifvtex
669       \def\BKM@driver{vtex}%

```

```

670 \else
671 \edef\BKM@driver{\BookmarkDriverDefault}%
672 \fi
673 \fi
674 \fi

```

Process options.

```

675 \ProcessKeyvalOptions*
676 \BKM@DisableOptions

```

Option draft

```

677 \ifBKM@draft
678 \PackageWarningNoLine{bookmark}{Draft mode on}%
679 \let\bookmarksetup\ltx@gobble
680 \let\BookmarkAtEnd\ltx@gobble
681 \let\bookmarkdefinestyle\ltx@gobbletwo
682 \let\bookmarkget\ltx@gobble
683 \let\pdfbookmark\ltx@undefined
684 \newcommand*{\pdfbookmark}[3][{}]{%
685 \let\currentpdfbookmark\ltx@gobbletwo
686 \let\subpdfbookmark\ltx@gobbletwo
687 \let\belowpdfbookmark\ltx@gobbletwo
688 \newcommand*{\bookmark}[2][{}]{%
689 \renewcommand*{\Hy@writebookmark}[5]{}%
690 \let\ReadBookmarks\relax
691 \let\BKM@DefGotoNameAction\ltx@gobbletwo % package `hypdestopt'
692 \expandafter\endinput
693 \fi

```

Driver validation and loading.

```

694 \newif\ifBKM@DvipdfmxOutlineOpen
695 \ltx@ifundefined{SpecialDvipdfmxOutlineOpen}{%
696 \ifxetex
697 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
698 \else
699 \chardef\SpecialDvipdfmxOutlineOpen\ltx@one
700 \BKM@DvipdfmxOutlineOpentrue
701 \fi
702 \fi
703 }{%
704 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
705 \BKM@DvipdfmxOutlineOpentrue
706 \fi
707 }

708 \def\BKM@temp{dvipdfmx}%
709 \ifx\BKM@temp\BKM@driver
710 \def\BKM@driver{dvipdfm}%
711 \fi
712 \def\BKM@temp{pdftex}%
713 \ifpdf
714 \ifx\BKM@temp\BKM@driver
715 \else
716 \PackageWarningNoLine{bookmark}{%
717 Wrong driver `BKM@driver', using `pdftex' instead%
718 }%
719 \let\BKM@driver\BKM@temp
720 \fi
721 \else
722 \ifx\BKM@temp\BKM@driver
723 \PackageError{bookmark}{%

```

```

724     Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
725     Package loading is aborted%
726   }\@ehc
727   \expandafter\expandafter\expandafter\endinput
728 \fi
729 \def\BKM@temp{dvipdfm}%
730 \ifxetex
731   \ifx\BKM@temp\BKM@driver
732   \else
733     \PackageWarningNoLine{bookmark}{%
734       Wrong driver `\'BKM@driver',\MessageBreak
735       using `dvipdfm' for XeTeX instead%
736     }%
737     \let\BKM@driver\BKM@temp
738   \fi
739 \else
740   \def\BKM@temp{vtex}%
741   \ifvtex
742     \ifx\BKM@temp\BKM@driver
743     \else
744       \PackageWarningNoLine{bookmark}{%
745         Wrong driver `\'BKM@driver',\MessageBreak
746         using `vtex' for VTeX instead%
747       }%
748       \let\BKM@driver\BKM@temp
749     \fi
750   \else
751     \ifx\BKM@temp\BKM@driver
752     \PackageError{bookmark}{%
753       Wrong driver, VTeX is not running in PDF mode.\MessageBreak
754       Package loading is aborted%
755     }\@ehc
756     \expandafter\expandafter\expandafter\endinput
757   \fi
758 \fi
759 \fi
760 \fi
761 \InputIfFileExists{bkm-\BKM@driver.def}{-}{%
762   \PackageError{bookmark}{%
763     Unsupported driver `\'BKM@driver'.\MessageBreak
764     Package loading is aborted%
765   }\@ehc
766   \endinput
767 }

```

3.1.9 Compatibility for hyperref

`\pdfbookmark`

```

768 \let\pdfbookmark\ltx@undefined
769 \newcommand*{\pdfbookmark}[3][0]{%
770   \bookmark[level=#1,dest={#3.#1}]{#2}%
771   \hyper@anchorstart{#3.#1}\hyper@anchorend
772 }

```

`\currentpdfbookmark`

```

773 \def\currentpdfbookmark{%
774   \pdfbookmark[\BKM@currentlevel]%
775 }

```

`\subpdfbookmark`

```

776 \def\subpdfbookmark{%
777   \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%

```

```

778 \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%
779 }

```

`\belowpdfbookmark`

```

780 \def\belowpdfbookmark#1#2{%
781 \xdef\BKM@gtemp{\number\BKM@currentlevel}%
782 \subpdfbookmark{#1}{#2}%
783 \global\let\BKM@currentlevel\BKM@gtemp
784 }

```

Section number, text, label, level, file

`\Hy@writebookmark`

```

785 \def\Hy@writebookmark#1#2#3#4#5{%
786 \ifnum#4>\BKM@depth\relax
787 \else
788 \def\BKM@type{#5}%
789 \ifx\BKM@type\Hy@bookmarkstype
790 \begingroup
791 \ifBKM@numbered
792 \let\numberline\Hy@numberline
793 \let\booknumberline\Hy@numberline
794 \let\partnumberline\Hy@numberline
795 \let\chapternumberline\Hy@numberline
796 \else
797 \let\numberline\@gobble
798 \let\booknumberline\@gobble
799 \let\partnumberline\@gobble
800 \let\chapternumberline\@gobble
801 \fi
802 \bookmark[level=#4,dest={#3}]{#2}%
803 \endgroup
804 \fi
805 \fi
806 }

```

`\ReadBookmarks`

```

807 \let\ReadBookmarks\relax
808 </package>

```

3.2 Driver for dvipdfm

```

809 <*dvipdfm>
810 \NeedsTeXFormat{LaTeX2e}
811 \ProvidesFile{bkm-dvipdfm.def}%
812 [2011/12/02 v1.24 bookmark driver for dvipdfm (HO)]%

```

`\BKM@id`

```

813 \newcount\BKM@id
814 \BKM@id=\z@

```

`\BKM@0`

```

815 \@namedef{BKM@0}{000}

```

`\ifBKM@sw`

```

816 \newif\ifBKM@sw

```

`\bookmark`

```

817 \newcommand*{\bookmark}[2][0]{%
818 \if@filesw
819 \begingroup

```



```

820 \def\bookmark@text{#2}%
821 \BKM@setup{#1}%
822 \edef\BKM@prev{\the\BKM@id}%
823 \global\advance\BKM@id\@ne
824 \BKM@swtrue
825 \@whiles\ifBKM@sw\fi{%
826   \def\BKM@abslevel{1}%
827   \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
828     \BKM@startatrootfalse
829     \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
830       0{\BKM@level}\BKM@abslevel
831     }%
832     \BKM@swfalse
833   \else
834     \expandafter\expandafter\expandafter\BKM@getx
835       \csname BKM@\BKM@prev\endcsname
836     \ifnum\BKM@level>\BKM@x@level\relax
837       \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
838       \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
839         {\BKM@prev}{\BKM@level}\BKM@abslevel
840       }%
841       \BKM@swfalse
842     \else
843       \let\BKM@prev\BKM@x@parent
844     \fi
845   \fi
846 }%
847 \csname HyPsd@XeTeXBigCharstrue\endcsname
848 \pdfstringdef\BKM@title{\bookmark@text}%
849 \edef\BKM@FLAGS{\BKM@PrintStyle}%
850 \let\BKM@action\@empty
851 \ifx\BKM@goto\@empty
852   \ifx\BKM@dest\@empty
853     \ifx\BKM@named\@empty
854       \ifx\BKM@rawaction\@empty
855         \ifx\BKM@uri\@empty
856           \ifx\BKM@page\@empty
857             \PackageError{bookmark}{Missing action}\@ehc
858             \edef\BKM@action{/Dest[@page1/Fit]}%
859           \else
860             \ifx\BKM@view\@empty
861               \def\BKM@view{Fit}%
862             \fi
863             \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]}%
864           \fi
865         \else
866           \BKM@EscapeString\BKM@uri
867           \edef\BKM@action{%
868             /A<<%
869             /S/URI%
870             /URI(\BKM@uri)%
871             >>%
872           }%
873         \fi
874       \else
875         \edef\BKM@action{/A<<\BKM@rawaction>>%
876       \fi
877     \else
878       \BKM@EscapeName\BKM@named
879       \edef\BKM@action{%
880         /A<</S/Named/N/\BKM@named>>%
881       }%

```

```

882     \fi
883   \else
884     \BKM@EscapeString\BKM@dest
885     \edef\BKM@action{%
886       /A<<%
887       /S/GoTo%
888       /D(\BKM@dest)%
889       >>%
890     }%
891   \fi
892 \else
893   \ifx\BKM@dest\@empty
894     \ifx\BKM@page\@empty
895       \def\BKM@page{0}%
896     \else
897       \BKM@CalcExpr\BKM@page\BKM@page-1%
898     \fi
899     \ifx\BKM@view\@empty
900       \def\BKM@view{Fit}%
901     \fi
902     \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
903   \else
904     \BKM@EscapeString\BKM@dest
905     \edef\BKM@action{/D(\BKM@dest)}%
906   \fi
907   \BKM@EscapeString\BKM@gotor
908   \edef\BKM@action{%
909     /A<<%
910     /S/GoToR%
911     /F(\BKM@gotor)%
912     \BKM@action
913     >>%
914   }%
915 \fi
916 \special{pdf:%
917   out \ifBKM@DvipdfmxOutlineOpen
918     [%
919     \ifBKM@open
920       \ifnum\BKM@level<%
921         \expandafter\ltx@firstofone\expandafter
922         {\number\BKM@openlevel} %
923       \else
924         -%
925       \fi
926     \else
927       -%
928     \fi
929   ] %
930   \fi
931   \BKM@abslevel
932 <<%
933   /Title(\BKM@title)%
934   \ifx\BKM@color\@empty
935   \else
936     /C[\BKM@color]%
937   \fi
938   \ifnum\BKM@FLAGS>\z@
939     /F \BKM@FLAGS
940   \fi
941   \BKM@action
942   >>%
943 }%

```

```

944     \endgroup
945   \fi
946 }

\BKM@getx

947 \def\BKM@getx#1#2#3{%
948   \def\BKM@x@parent{#1}%
949   \def\BKM@x@level{#2}%
950   \def\BKM@x@abslevel{#3}%
951 }

952 </dvipdfm>

```

3.3 Driver for VTeX

```

953 < *vtex>
954 \NeedsTeXFormat{LaTeX2e}
955 \ProvidesFile{bkm-vtex.def}%
956   [2011/12/02 v1.24 bookmark driver for VTeX (HO)]%

957 \ifvtexpdf
958 \else
959   \PackageWarningNoLine{bookmark}{%
960     The VTeX driver only supports PDF mode%
961   }%
962 \fi

\BKM@id

963 \newcount\BKM@id
964 \BKM@id=\z@

\BKM@O

965 \@namedef{BKM@O}{O}

\ifBKM@sw

966 \newif\ifBKM@sw

\bookmark

967 \newcommand*{\bookmark}[2][1]{%
968   \if@filesw
969     \begingroup
970     \def\bookmark@text{#2}%
971     \BKM@setup{#1}%
972     \edef\BKM@prev{\the\BKM@id}%
973     \global\advance\BKM@id\@ne
974     \BKM@swtrue
975     \@whilesw\ifBKM@sw\fi{%
976       \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
977         \BKM@startatrootfalse
978         \def\BKM@parent{O}%
979         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
980           O{\BKM@level}}%
981       }%
982       \BKM@swfalse
983     \else
984       \expandafter\expandafter\expandafter\BKM@getx
985         \csname BKM@\BKM@prev\endcsname
986       \ifnum\BKM@level>\BKM@x@level\relax
987         \let\BKM@parent\BKM@prev
988         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
989           {\BKM@prev}{\BKM@level}}%
990       }%
991       \BKM@swfalse

```

```

992         \else
993         \let\BKM@prev\BKM@x@parent
994     \fi
995 \fi
996 }%
997 \pdfstringdef\BKM@title{\bookmark@text}%
998 \BKM@vtx@title
999 \edef\BKM@FLAGS{\BKM@PrintStyle}%
1000 \let\BKM@action\@empty
1001 \ifx\BKM@goto\@empty
1002     \ifx\BKM@dest\@empty
1003         \ifx\BKM@named\@empty
1004             \ifx\BKM@rawaction\@empty
1005                 \ifx\BKM@uri\@empty
1006                     \ifx\BKM@page\@empty
1007                         \PackageError{bookmark}{Missing action}\@ehc
1008                         \def\BKM@action{!}%
1009                     \else
1010                         \edef\BKM@action{!\BKM@page}%
1011                     \fi
1012                 \else
1013                     \BKM@EscapeString\BKM@uri
1014                     \edef\BKM@action{%
1015                         <u=%
1016                         /S/URI%
1017                         /URI(\BKM@uri)%
1018                         >%
1019                     }%
1020                 \fi
1021             \else
1022                 \edef\BKM@action{<u=\BKM@rawaction>}%
1023             \fi
1024         \else
1025             \BKM@EscapeName\BKM@named
1026             \edef\BKM@action{%
1027                 <u=%
1028                 /S/Named%
1029                 /N/\BKM@named
1030                 >%
1031             }%
1032         \fi
1033     \else
1034         \BKM@EscapeString\BKM@dest
1035         \edef\BKM@action{\BKM@dest}%
1036     \fi
1037 \else
1038     \ifx\BKM@dest\@empty
1039         \ifx\BKM@page\@empty
1040             \def\BKM@page{1}%
1041         \fi
1042         \ifx\BKM@view\@empty
1043             \def\BKM@view{Fit}%
1044         \fi
1045         \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
1046     \else
1047         \BKM@EscapeString\BKM@dest
1048         \edef\BKM@action{/D(\BKM@dest)}%
1049     \fi
1050     \BKM@EscapeString\BKM@goto
1051     \edef\BKM@action{%
1052         <u=%
1053         /S/GoToR%

```

```

1054         /F(\BKM@gotor)%
1055         \BKM@action
1056         >>%
1057     }%
1058 \fi
1059 \ifx\BKM@color\@empty
1060     \let\BKM@RGBcolor\@empty
1061 \else
1062     \expandafter\BKM@toRGB\BKM@color\@nil
1063 \fi
1064 \special{%
1065     !outline \BKM@action;%
1066     p=\BKM@parent,%
1067     i=\number\BKM@id,%
1068     s=%
1069     \ifBKM@open
1070         \ifnum\BKM@level<\BKM@openlevel
1071             o%
1072         \else
1073             c%
1074         \fi
1075     \else
1076         c%
1077     \fi,%
1078     \ifx\BKM@RGBcolor\@empty
1079     \else
1080         c=\BKM@RGBcolor,%
1081     \fi
1082     \ifnum\BKM@FLAGS>\z@
1083         f=\BKM@FLAGS,%
1084     \fi
1085     t=\BKM@title
1086 }%
1087 \endgroup
1088 \fi
1089 }

\BKM@getx
1090 \def\BKM@getx#1#2{%
1091     \def\BKM@x@parent{#1}%
1092     \def\BKM@x@level{#2}%
1093 }

\BKM@toRGB
1094 \def\BKM@toRGB#1 #2 #3\@nil{%
1095     \let\BKM@RGBcolor\@empty
1096     \BKM@toRGBComponent{#1}%
1097     \BKM@toRGBComponent{#2}%
1098     \BKM@toRGBComponent{#3}%
1099 }

\BKM@toRGBComponent
1100 \def\BKM@toRGBComponent#1{%
1101     \dimen@=#1pt\relax
1102     \ifdim\dimen@>\z@
1103         \ifdim\dimen@<\p@
1104             \dimen@=255\dimen@
1105             \advance\dimen@ by 32768sp\relax
1106             \divide\dimen@ by 65536\relax
1107             \dimen@ii=\dimen@
1108             \divide\dimen@ii by 16\relax
1109             \edef\BKM@RGBcolor{%

```

```

1110         \BKM@RGBcolor
1111         \BKM@toHexDigit\dimen@ii
1112     }%
1113     \dimen@ii=16\dimen@ii
1114     \advance\dimen@-\dimen@ii
1115     \edef\BKM@RGBcolor{%
1116         \BKM@RGBcolor
1117         \BKM@toHexDigit\dimen@
1118     }%
1119     \else
1120         \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
1121     \fi
1122 \else
1123     \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
1124 \fi
1125 }

\BKM@toHexDigit
1126 \def\BKM@toHexDigit#1{%
1127     \ifcase\expandafter\@firstofone\expandafter{\number#1} %
1128         0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
1129         8\or 9\or A\or B\or C\or D\or E\or F%
1130     \fi
1131 }

1132 \begingroup
1133 \catcode`\|=0 %
1134 \catcode`\|=12 %

\BKM@vtex@title
1135 |gdef|BKM@vtex@title{%
1136     |onelevel@sanitize|BKM@title
1137     |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\|@nil}%
1138     |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\|@nil}%
1139     |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
1140     |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
1141     |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
1142     |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
1143 }%

\BKM@vtex@leftparen
1144 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
1145     #1%
1146     |ifx||#2| |%
1147     |else
1148         (%
1149         |ltx@ReturnAfterFi{%
1150             |BKM@vtex@leftparen#2|@nil
1151         }%
1152     |fi
1153 }%

\BKM@vtex@rightparen
1154 |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
1155     #1%
1156     |ifx||#2| |%
1157     |else
1158         )%
1159         |ltx@ReturnAfterFi{%
1160             |BKM@vtex@rightparen#2|@nil
1161         }%
1162     |fi
1163 }%

```

```

\BKM@vtex@zero
1164 |gdef|BKM@vtex@zero#1\0#2|@nil{%
1165   #1%
1166   |ifx||#2| |%
1167   |else
1168     |noexpand|hv@pdf@char0%
1169     |ltx@ReturnAfterFi{%
1170       |BKM@vtex@zero#2|@nil
1171     }%
1172   |fi
1173 }%

```

```

\BKM@vtex@one
1174 |gdef|BKM@vtex@one#1\1#2|@nil{%
1175   #1%
1176   |ifx||#2| |%
1177   |else
1178     |noexpand|hv@pdf@char1%
1179     |ltx@ReturnAfterFi{%
1180       |BKM@vtex@one#2|@nil
1181     }%
1182   |fi
1183 }%

```

```

\BKM@vtex@two
1184 |gdef|BKM@vtex@two#1\2#2|@nil{%
1185   #1%
1186   |ifx||#2| |%
1187   |else
1188     |noexpand|hv@pdf@char2%
1189     |ltx@ReturnAfterFi{%
1190       |BKM@vtex@two#2|@nil
1191     }%
1192   |fi
1193 }%

```

```

\BKM@vtex@three
1194 |gdef|BKM@vtex@three#1\3#2|@nil{%
1195   #1%
1196   |ifx||#2| |%
1197   |else
1198     |noexpand|hv@pdf@char3%
1199     |ltx@ReturnAfterFi{%
1200       |BKM@vtex@three#2|@nil
1201     }%
1202   |fi
1203 }%

1204 |endgroup
1205 </vtex>

```

3.4 Driver for pdfTeX

```

1206 <*pdfTeX>
1207 \NeedsTeXFormat{LaTeX2e}
1208 \ProvidesFile{bkm-pdfTeX.def}%
1209 [2011/12/02 v1.24 bookmark driver for pdfTeX (H0)]%

\BKM@DO@entry
1210 \def\BKM@DO@entry#1#2{%
1211   \begingroup
1212     \kvsetkeys{BKM@DO}{#1}%

```

```

1213 \def\BKM@D0@title{#2}%
1214 \ifx\BKM@D0@srcfile\@empty
1215 \else
1216 \BKM@UnescapeHex\BKM@D0@srcfile
1217 \fi
1218 \BKM@UnescapeHex\BKM@D0@title
1219 \expandafter\expandafter\expandafter\BKM@getx
1220 \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1221 \let\BKM@attr\@empty
1222 \ifx\BKM@D0@flags\@empty
1223 \else
1224 \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1225 \fi
1226 \ifx\BKM@D0@color\@empty
1227 \else
1228 \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1229 \fi
1230 \ifx\BKM@attr\@empty
1231 \else
1232 \edef\BKM@attr{attr{\BKM@attr}}%
1233 \fi
1234 \let\BKM@action\@empty
1235 \ifx\BKM@D0@goto\@empty
1236 \ifx\BKM@D0@dest\@empty
1237 \ifx\BKM@D0@named\@empty
1238 \ifx\BKM@D0@rawaction\@empty
1239 \ifx\BKM@D0@uri\@empty
1240 \ifx\BKM@D0@page\@empty
1241 \PackageError{bookmark}{%
1242 Missing action\BKM@SourceLocation
1243 }{\@ehc
1244 \edef\BKM@action{goto page1{/Fit}}}%
1245 \else
1246 \ifx\BKM@D0@view\@empty
1247 \def\BKM@D0@view{Fit}%
1248 \fi
1249 \edef\BKM@action{goto page\BKM@D0@page{/ \BKM@D0@view}}%
1250 \fi
1251 \else
1252 \BKM@UnescapeHex\BKM@D0@uri
1253 \BKM@EscapeString\BKM@D0@uri
1254 \edef\BKM@action{user{<</S/URI/URI(\BKM@D0@uri)>>}}%
1255 \fi
1256 \else
1257 \BKM@UnescapeHex\BKM@D0@rawaction
1258 \edef\BKM@action{%
1259 user{%
1260 <<%
1261 \BKM@D0@rawaction
1262 >>%
1263 }%
1264 }%
1265 \fi
1266 \else
1267 \BKM@EscapeName\BKM@D0@named
1268 \edef\BKM@action{%
1269 user{<</S/Named/N/\BKM@D0@named>>}}%
1270 }%
1271 \fi
1272 \else
1273 \BKM@UnescapeHex\BKM@D0@dest
1274 \BKM@DefGotoNameAction\BKM@action\BKM@D0@dest

```



```

1275     \fi
1276   \else
1277     \ifx\BKM@D0@dest\@empty
1278       \ifx\BKM@D0@page\@empty
1279         \def\BKM@D0@page{0}%
1280       \else
1281         \BKM@CalcExpr\BKM@D0@page\BKM@D0@page-1%
1282       \fi
1283     \ifx\BKM@D0@view\@empty
1284       \def\BKM@D0@view{Fit}%
1285     \fi
1286     \edef\BKM@action{/D[\BKM@D0@page/\BKM@D0@view]}%
1287   \else
1288     \BKM@UnescapeHex\BKM@D0@dest
1289     \BKM@EscapeString\BKM@D0@dest
1290     \edef\BKM@action{/D(\BKM@D0@dest)}%
1291   \fi
1292   \BKM@UnescapeHex\BKM@D0@goto
1293   \BKM@EscapeString\BKM@D0@goto
1294   \edef\BKM@action{%
1295     user{%
1296       <<%
1297         /S/GoToR%
1298         /F(\BKM@D0@goto)%
1299         \BKM@action
1300       >>%
1301     }%
1302   }%
1303 \fi
1304 \pdfoutline\BKM@attr\BKM@action
1305       count\ifBKM@D0@open\else-\fi\BKM@x@childs
1306       {\BKM@D0@title}%
1307 \endgroup
1308 }

```

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

```

1309 \def\BKM@DefGotoNameAction#1#2{%
1310   \BKM@EscapeString\BKM@D0@dest
1311   \edef#1{goto name{#2}}%
1312 }

```

1313 </pdfTeX>

1314 <*pdfTeX j pdfmark>

\BKM@SourceLocation

```

1315 \def\BKM@SourceLocation{%
1316   \ifx\BKM@D0@srcfile\@empty
1317     \ifx\BKM@D0@srcline\@empty
1318       \else
1319         .\MessageBreak
1320         Source: line \BKM@D0@srcline
1321       \fi
1322     \else
1323       \ifx\BKM@D0@srcline\@empty
1324         .\MessageBreak
1325         Source: file ` \BKM@D0@srcfile'%
1326       \else
1327         .\MessageBreak
1328         Source: file ` \BKM@D0@srcfile', line \BKM@D0@srcline
1329       \fi
1330     \fi
1331 }

```

```
1332 </pdfTeX.j pdfmark>
```

3.5 Drivers with pdfmark specials

3.5.1 Driver dvips

```
1333 <*dvips>
1334 \NeedsTeXFormat{LaTeX2e}
1335 \ProvidesFile{bkm-dvips.def}%
1336 [2011/12/02 v1.24 bookmark driver for dvips (H0)]%
```

\BKM@PSHeaderFile

```
1337 \def\BKM@PSHeaderFile#1{%
1338   \special{header=#1}%
1339 }
```

```
1340 </dvips>
```

3.5.2 Driver dvipsone

```
1341 <*dvipsone>
1342 \NeedsTeXFormat{LaTeX2e}
1343 \ProvidesFile{bkm-dvipsone.def}%
1344 [2011/12/02 v1.24 bookmark driver for dvipsone (H0)]%
```

\BKM@PSHeaderFile

```
1345 \def\BKM@PSHeaderFile#1{%
1346   \special{header=#1}%
1347 }
```

```
1348 </dvipsone>
```

3.5.3 Driver textures

```
1349 <*textures>
1350 \NeedsTeXFormat{LaTeX2e}
1351 \ProvidesFile{bkm-textures.def}%
1352 [2011/12/02 v1.24 bookmark driver for textures (H0)]%
```

\BKM@PSHeaderFile

```
1353 \def\BKM@PSHeaderFile#1{%
1354   \special{prePostScriptfile #1}%
1355 }
```

```
1356 </textures>
```

3.5.4 Common part

```
1357 <*pdfmark>
```

\BKM@filename

```
1358 \def\BKM@filename{\jobname.out.ps}

1359 \BKM@PSHeaderFile\BKM@filename

1360 \RequirePackage{atveryend}[2009/12/07]
1361 \AfterLastShipout{\BKM@pdfmark@out}
```

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

```
1362 \def\BKM@pdfmark@out{%
1363   \if@filesw
1364     \newwrite\BKM@file
1365     \immediate\openout\BKM@file=\BKM@filename\relax
1366     \BKM@write{\@percentchar!}%
```

```

1367 \BKM@write{/pdfmark where{pop}}}%
1368 \BKM@write{%
1369   {%
1370     /globaldict where{pop globaldict}{userdict}ifelse%
1371     /pdfmark/cleartomark load put%
1372   }%
1373 }%
1374 \BKM@write{ifelse}%
1375 \else
1376   \let\BKM@write\@gobble
1377   \let\BKM@DO@entry\@gobbletwo
1378 \fi
1379 }

```

\BKM@write

```

1380 \def\BKM@write#{%
1381   \immediate\write\BKM@file
1382 }

```

\BKM@DO@entry 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.

```

1383 \def\BKM@DO@entry#1#2{%
1384   \begingroup
1385     \kvsetkeys{BKM@DO}{#1}%
1386     \ifx\BKM@DO@srcfile\@empty
1387       \else
1388         \BKM@UnescapeHex\BKM@DO@srcfile
1389       \fi
1390     \def\BKM@DO@title{#2}%
1391     \BKM@UnescapeHex\BKM@DO@title
1392     \expandafter\expandafter\expandafter\BKM@getx
1393     \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1394     \let\BKM@attr\@empty
1395     \ifx\BKM@DO@flags\@empty
1396       \else
1397         \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1398       \fi
1399     \ifx\BKM@DO@color\@empty
1400       \else
1401         \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1402       \fi
1403     \let\BKM@action\@empty
1404     \ifx\BKM@DO@goto\@empty
1405       \ifx\BKM@DO@dest\@empty
1406         \ifx\BKM@DO@named\@empty
1407           \ifx\BKM@DO@rawaction\@empty
1408             \ifx\BKM@DO@uri\@empty
1409               \ifx\BKM@DO@page\@empty
1410                 \PackageError{bookmark}{%
1411                   Missing action\BKM@SourceLocation
1412                 }\@ehc
1413                 \edef\BKM@action{%
1414                   /Action/GoTo%
1415                   /Page 1%
1416                   /View[/Fit]%
1417                 }%
1418               \else
1419                 \ifx\BKM@DO@view\@empty
1420                   \def\BKM@DO@view{Fit}%
1421                 \fi
1422                 \edef\BKM@action{%

```

```

1423         /Action/GoTo%
1424         /Page \BKM@DO@page
1425         /View[/\BKM@DO@view]%
1426     }%
1427     \fi
1428     \else
1429         \BKM@UnescapeHex\BKM@DO@uri
1430         \BKM@EscapeString\BKM@DO@uri
1431         \edef\BKM@action{%
1432             /Action<<%
1433             /Subtype/URI%
1434             /URI(\BKM@DO@uri)%
1435             >>%
1436         }%
1437     \fi
1438     \else
1439         \BKM@UnescapeHex\BKM@DO@rawaction
1440         \edef\BKM@action{%
1441             /Action<<%
1442             \BKM@DO@rawaction
1443             >>%
1444         }%
1445     \fi
1446     \else
1447         \BKM@EscapeName\BKM@DO@named
1448         \edef\BKM@action{%
1449             /Action<<%
1450             /Subtype/Named%
1451             /N/\BKM@DO@named
1452             >>%
1453         }%
1454     \fi
1455     \else
1456         \BKM@UnescapeHex\BKM@DO@dest
1457         \BKM@EscapeString\BKM@DO@dest
1458         \edef\BKM@action{%
1459             /Action/GoTo%
1460             /Dest(\BKM@DO@dest)cvn%
1461         }%
1462     \fi
1463     \else
1464         \ifx\BKM@DO@dest\@empty
1465             \ifx\BKM@DO@page\@empty
1466                 \def\BKM@DO@page{1}%
1467             \fi
1468             \ifx\BKM@DO@view\@empty
1469                 \def\BKM@DO@view{Fit}%
1470             \fi
1471             \edef\BKM@action{%
1472                 /Page \BKM@DO@page
1473                 /View[/\BKM@DO@view]%
1474             }%
1475         \else
1476             \BKM@UnescapeHex\BKM@DO@dest
1477             \BKM@EscapeString\BKM@DO@dest
1478             \edef\BKM@action{%
1479                 /Dest(\BKM@DO@dest)cvn%
1480             }%
1481         \fi
1482         \BKM@UnescapeHex\BKM@DO@gotor
1483         \BKM@EscapeString\BKM@DO@gotor
1484         \edef\BKM@action{%

```

```

1485         /Action/GoToR%
1486         /File(\BKM@D0@gotor)%
1487         \BKM@action
1488     }%
1489 \fi
1490 \BKM@write{[]}%
1491 \BKM@write{/Title(\BKM@D0@title)}%
1492 \ifnum\BKM@x@chlds>\z@
1493     \BKM@write{/Count \ifBKM@D0@open\else-\fi\BKM@x@chlds}%
1494 \fi
1495 \ifx\BKM@attr\@empty
1496 \else
1497     \BKM@write{\BKM@attr}%
1498 \fi
1499 \BKM@write{\BKM@action}%
1500 \BKM@write{/OUT pdfmark}%
1501 \endgroup
1502 }

1503 </pdfmark>

```

3.6 Common part for pdftex and pdfmark

```
1504 <*pdftex.j pdfmark>
```

3.6.1 Write auxiliary file

```

1505 \RequirePackage{auxhook}
1506 \AddLineBeginMainAux{%
1507     \string\providecommand\string\BKM@entry[2]{}%
1508 }

\BKM@id
1509 \newcount\BKM@id
1510 \BKM@id=\z@

\BKM@0
1511 \@namedef{BKM@0}{000}

\ifBKM@sw
1512 \newif\ifBKM@sw

\bookmark
1513 \newcommand*{\bookmark}[2][{}]{%
1514     \if@filesw
1515         \begingroup
1516         \BKM@InitSourceLocation
1517         \def\bookmark@text{#2}%
1518         \BKM@setup{#1}%
1519         \ifx\BKM@srcfile\@empty
1520         \else
1521             \BKM@EscapeHex\BKM@srcfile
1522         \fi
1523         \edef\BKM@prev{\the\BKM@id}%
1524         \global\advance\BKM@id\@ne
1525         \BKM@swtrue
1526         \@whiles\ifBKM@sw\fi{%
1527             \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1528                 \BKM@startatrootfalse
1529                 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1530                     0{\BKM@level}0%
1531                 }%
1532                 \BKM@swfalse

```

```

1533     \else
1534         \expandafter\expandafter\expandafter\BKM@getx
1535             \csname BKM@\BKM@prev\endcsname
1536         \ifnum\BKM@level>\BKM@x@level\relax
1537             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1538                 {\BKM@prev}{\BKM@level}0%
1539             }%
1540             \ifnum\BKM@prev>\z@
1541                 \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1542                 \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1543                     {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1544                 }%
1545             \fi
1546             \BKM@swfalse
1547         \else
1548             \let\BKM@prev\BKM@x@parent
1549         \fi
1550     \fi
1551 }%
1552 \pdfstringdef\BKM@title{\bookmark@text}%
1553 \edef\BKM@FLAGS{\BKM@PrintStyle}%
1554 \csname BKM@HypDestOptHook\endcsname
1555 \BKM@EscapeHex\BKM@dest
1556 \BKM@EscapeHex\BKM@uri
1557 \BKM@EscapeHex\BKM@goto
1558 \BKM@EscapeHex\BKM@rawaction
1559 \BKM@EscapeHex\BKM@title
1560 \immediate\write\@mainaux{%
1561     \string\BKM@entry{%
1562         id=\number\BKM@id
1563         \ifBKM@open
1564             \ifnum\BKM@level<\BKM@openlevel
1565                 ,open%
1566             \fi
1567         \fi
1568         \BKM@auxentry{dest}%
1569         \BKM@auxentry{named}%
1570         \BKM@auxentry{uri}%
1571         \BKM@auxentry{goto}%
1572         \BKM@auxentry{page}%
1573         \BKM@auxentry{view}%
1574         \BKM@auxentry{rawaction}%
1575         \BKM@auxentry{color}%
1576         \ifnum\BKM@FLAGS>\z@
1577             ,flags=\BKM@FLAGS
1578         \fi
1579         \BKM@auxentry{srcline}%
1580         \BKM@auxentry{srcfile}%
1581     }\BKM@title}%
1582 }%
1583 \endgroup
1584 \fi
1585 }

\BKM@getx
1586 \def\BKM@getx#1#2#3{%
1587     \def\BKM@x@parent{#1}%
1588     \def\BKM@x@level{#2}%
1589     \def\BKM@x@childs{#3}%
1590 }

\BKM@auxentry

```

```

1591 \def\BKM@auxentry#1{%
1592   \expandafter\ifx\csname BKM@#1\endcsname\@empty
1593   \else
1594     ,#1={\csname BKM@#1\endcsname}%
1595   \fi
1596 }

```

\BKM@InitSourceLocation

```

1597 \def\BKM@InitSourceLocation{%
1598   \edef\BKM@srcline{\the\inputlineno}%
1599   \BKM@LuaTeX@InitFile
1600   \ifx\BKM@srcfile\@empty
1601     \ltx@ifundefined{currfilepath}{}%
1602     \edef\BKM@srcfile{\currfilepath}%
1603   }%
1604   \fi
1605 }

```

\BKM@LuaTeX@InitFile

```

1606 \ifluatex
1607   \ifnum\luatexversion>36 %
1608     \def\BKM@LuaTeX@InitFile{%
1609       \begingroup
1610         \ltx@LocToksA={}%
1611       \edef\x{\endgroup
1612         \def\noexpand\BKM@srcfile{%
1613           \the\expandafter\ltx@LocToksA
1614           \directlua{%
1615             if status and status.filename then %
1616               tex.settoks('ltx@LocToksA', status.filename)%
1617             end%
1618           }}%
1619       }%
1620     }\x
1621   }%
1622 \else
1623   \let\BKM@LuaTeX@InitFile\relax
1624 \fi
1625 \else
1626   \let\BKM@LuaTeX@InitFile\relax
1627 \fi

```

3.6.2 Read auxiliary data

```

1628 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1629 \DeclareStringOption[0]{id}
1630 \DeclareBoolOption{open}
1631 \DeclareStringOption{flags}
1632 \DeclareStringOption{color}
1633 \DeclareStringOption{dest}
1634 \DeclareStringOption{named}
1635 \DeclareStringOption{uri}
1636 \DeclareStringOption{gotor}
1637 \DeclareStringOption{page}
1638 \DeclareStringOption{view}
1639 \DeclareStringOption{rawaction}
1640 \DeclareStringOption{srcline}
1641 \DeclareStringOption{srcfile}

1642 \AtBeginDocument{%
1643   \let\BKM@entry\BKM@DO@entry
1644 }

1645 </pdfTeX j pdfmark>

```

3.7 Option `atend`

3.7.1 Hook

```
1646 <*package>
1647 \ifBKM@atend
1648 \else
\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
given.
1649 \newcommand{\BookmarkAtEnd}[1]{%
1650 \PackageWarning{bookmark}{%
1651 Ignored, because option `atend' is missing%
1652 }%
1653 }%

1654 \expandafter\endinput
1655 \fi

\BookmarkAtEnd
1656 \newcommand*{\BookmarkAtEnd}{%
1657 \g@addto@macro\BKM@EndHook
1658 }

1659 \let\BKM@EndHook\@empty
1660 </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.

```
1661 <*pdftex j pdfmark>
1662 \ifBKM@atend
1663 \AfterLastShipout{%
1664 \BKM@EndHook
1665 }%
1666 \fi
1667 </pdftex j pdfmark>
```

3.7.3 Drivers using `\AtEndDvi`

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

```
1668 <*dvi pdfm j vtex>
1669 \ifBKM@atend
1670 \RequirePackage{atenddvi}%
1671 \AtEndDvi{\BKM@EndHook}%
1672 \fi
1673 </dvi pdfm j vtex>
```


4 Installation

4.1 Download

Package. This package is available on CTAN¹:

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

[CTAN:macros/latex/contrib/oberdiek/bookmark.pdf](#) Documentation.

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

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

TDS refers to the standard “A Directory Structure for \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>	→ <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-dvipsonsone.def</code>	→ <code>tex/latex/oberdiek/bkm-dvipsonsone.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`.

¹<ftp://ftp.ctan.org/tex-archive/>

4.4 Refresh file name databases

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

4.5 Some details for the interested

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

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

Unpacking with $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$. The `.dtx` chooses its action depending on the format:

plain $\text{T}_{\text{E}}\text{X}$: Run `docstrip` and extract the files.

$\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$: Generate the documentation.

If you insist on using $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ for `docstrip` (really, `docstrip` does not need $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{bookmark.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdf $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$:

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

5 Catalogue

The following XML file can be used as source for the [\$\text{T}_{\text{E}}\text{X}\$ Catalogue](#). The elements `caption` and `description` are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is `bookmark.xml`.

```
1674 <*catalogue>
1675 <?xml version='1.0' encoding='us-ascii'?>
1676 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
1677 <entry datestamp='$Date$' modifier='$Author$' id='bookmark'>
1678   <name>bookmark</name>
1679   <caption>A new bookmark (outline) organization for hyperref.</caption>
1680   <authorref id='auth:oberdiek' />
1681   <copyright owner='Heiko Oberdiek' year='2007-2011' />
1682   <license type='lppl1.3' />
1683   <version number='1.24' />
1684   <description>
1685     This package implements a new bookmark (outline) organization for
1686     package <xref refid='hyperref'>hyperref</xref>. Bookmark properties such
1687     as style and color can now be set. Other action types
1688     are available (URI, GoToR, Named). The bookmarks are
1689     generated in the first compile run. Package
```

```

1690 <xref refid='hyperref'>hyperref</xref> uses two runs.
1691 <p/>
1692 The package is part of the <xref refid='oberdiek'>oberdiek</xref>
1693 bundle.
1694 </description>
1695 <documentation details='Package documentation'
1696 href='ctan:/macros/latex/contrib/oberdiek/bookmark.pdf' />
1697 <ctan file='true' path='/macros/latex/contrib/oberdiek/bookmark.dtx' />
1698 <miktex location='oberdiek' />
1699 <texlive location='oberdiek' />
1700 <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip' />
1701 </entry>
1702 </catalogue>

```

6 References

- [1] Sebastian Rahtz, Heiko Oberdiek: *The hyperref package*; 2011/04/17 v6.82g; [CTAN:macros/latex/contrib/hyperref/](#)
- [2] Martin Scharrer: *The currfile package*; 2011/01/09 v0.4. [CTAN:macros/latex/contrib/currfile/](#)

7 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- $\text{pdf}\text{T}_{\text{E}}\text{X}$ users.

[2007/02/21 v0.3]

- Dependency from $\text{pdf}\text{T}_{\text{E}}\text{X}$ 1.30 removed by using package `pdfescape`.

[2007/02/22 v0.4]

- `hyperref`'s `bookmarkstyle` respected.

[2007/03/02 v0.5]

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

[2007/03/03 v0.6]

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

[2007/03/07 v0.7]

- Dependency from $\epsilon\text{-T}_{\text{E}}\text{X}$ 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.

[2009/12/17 v1.8]

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

[2010/03/30 v1.9]

- Package name in an error message fixed.

[2010/04/03 v1.10]

- Option `style` and macro `\bookmarkdefinestyle` added.
- Hook support with option `addtohook` added.
- `\bookmarkget` added.

[2010/04/04 v1.11]

- Bug fix (introduced in v1.10).

[2010/04/08 v1.12]

- Requires `ltxcmds` 2010/04/08.

[2010/07/23 v1.13]

- Support for memoir's `\booknumberline` added.

[2010/09/02 v1.14]

- (Local) options `draft` and `final` added.

[2010/09/25 v1.15]

- Fix for option `dvipdfmx-outline-open`.
- Option `dvipdfmx-outline-open` is set automatically, if XeTeX ≥ 0.9995 is detected.

[2010/10/19 v1.16]

- Option 'startatroot' now acts globally.
- Option 'level' also accepts names the same way as option 'depth'.

[2010/10/25 v1.17]

- `\bookmarksetupnext` added.
- Using `\kvsetkeys` of package `kvsetkeys`, because `\setkeys` of package `keyval` is not reentrant. This can cause problems (unknown keys) with older versions of `hyperref` that also uses `\setkeys` (found by GL).

[2010/11/05 v1.18]

- Use of `\pdf@ifdraftmode` of package `pdftexcmds` for the default of option `draft`.

[2011/03/20 v1.19]

- Use of `\dimexpr` fixed, if ε -TeX is not used. (Bug found by Martin Münch.)
- Fix in documentation. Also layout options work without ε -TeX.

[2011/04/13 v1.20]

- Bug fix: `\BKM@SetDepth` renamed to `\BKM@SetDepthOrLevel`.

[2011/04/21 v1.21]

- Some support for file name and line number in error messages at end of document (pdfTeX and pdfmark based drivers).

[2011/05/13 v1.22]

- Change of version 2010/11/05 v1.18 reverted, because otherwise draftmode disables some `.aux` file entries.

[2011/09/19 v1.23]

- Some `\renewcommands` changed to `\def` to avoid trouble if the commands are not defined, because hyperref stopped early.

[2011/12/02 v1.24]

- Small optimization in `\BKM@toHexDigit`.

8 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; plain numbers refer to the code lines where the entry is used.

Symbols			
<code>\"</code>	.....	33	
<code>\(</code>	.....	1137, 1144	
<code>\)</code>	.....	1138, 1154	
<code>\@bookmarksopenlevel</code>	.....	213	
<code>\@car</code>	.....	227, 267, 421, 435	
<code>\@ehc</code>	.....	383, 425, 574, 586, 726, 755, 765, 857, 1007, 1243, 1412	
<code>\@empty</code>	.....	121, 127, 133, 222, 363, 378, 388, 393, 442, 459, 467, 475, 483, 501, 513, 523, 533, 850, 851, 852, 853, 854, 855, 856, 860, 893, 894, 899, 934, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1038, 1039, 1042, 1059, 1060, 1078, 1095, 1214, 1220, 1221, 1222, 1226, 1230, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1246, 1277, 1278, 1283, 1316, 1317, 1323, 1386, 1393, 1394, 1395, 1399, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1419, 1464, 1465, 1468, 1495, 1519, 1592, 1600, 1659	
<code>\@firstofone</code>	.....	532, 582, 1127	
<code>\@gobble</code>	.....	437, 587, 797, 798, 799, 800, 1376	
<code>\@gobbletwo</code>	.....	606, 1377	
<code>\@ifundefined</code>	.....	537, 538, 560, 571	
<code>\@mainaux</code>	.....	1560	
<code>\@namedef</code>	.....	564, 815, 965, 1511	
<code>\@ne</code>	.....	651, 823, 973, 1524	
<code>\@nil</code>	.....	227, 267, 396, 398, 404, 407, 410, 413, 428, 440, 454, 456, 495, 497, 533, 535, 1062, 1094	
<code>\@onelevel@sanitize</code>	.....	226, 266, 400, 432, 500, 512, 529, 578	
<code>\@percentchar</code>	.....	1366	
<code>\@whiles</code>	.....	825, 975, 1526	
<code>\@</code>	.....	1134	
<code>\|</code>	.....	1133	
Numbers			
<code>\0</code>	.....	1139, 1164	
<code>\1</code>	.....	1140, 1174	
<code>\2</code>	.....	1141, 1184	
<code>\3</code>	.....	1142, 1194	
A			
<code>\AddLineBeginMainAux</code>	.....	1506	
<code>\advance</code>	106, 823, 973, 1105, 1114, 1524		
<code>\AfterLastShipout</code>	.....	1361, 1663	
<code>\AtBeginDocument</code>	.....	1642	
<code>\AtEndDvi</code>	.....	1671	
B			
<code>\begin</code>	.....	19, 22	
<code>\belowpdfbookmark</code>	.....	687, <u>780</u>	
<code>\bitsetClear</code>	.....	341, 348	
<code>\bitsetGet</code>	.....	352, 355	
<code>\bitsetGetDec</code>	.....	358	
<code>\bitsetReset</code>	.....	336	
<code>\bitsetSet</code>	.....	339, 346	

\BKM@O	815, 965, 1511	\BKM@DO@page	1240, 1249, 1278, 1279, 1281,
\BKM@@@PatchHyperrefOption ..	325, 327		1286, 1409, 1424, 1465, 1466, 1472
\BKM@CalcParam	533, 535	\BKM@DO@rawaction	1238, 1257, 1261, 1407, 1439, 1442
\BKM@CheckRect	454, 456	\BKM@DO@srcfile	1214,
\BKM@CheckXYZ	495, 497		1216, 1316, 1325, 1328, 1386, 1388
\BKM@page	389	\BKM@DO@srcline	1317, 1320, 1323, 1328
\BKM@@PatchHyperrefOption ..	322, 324	\BKM@DO@title	1213, 1218, 1306, 1390, 1391, 1491
\BKM@abslevel ..	826, 830, 837, 839, 931	\BKM@DO@uri	1239, 1252,
\BKM@action			1253, 1254, 1408, 1429, 1430, 1434
	850, 858, 863, 867, 875, 879,	\BKM@DO@view	1246,
	885, 902, 905, 908, 912, 941,		1247, 1249, 1283, 1284, 1286,
	1000, 1008, 1010, 1014, 1022,		1419, 1420, 1425, 1468, 1469, 1473
	1026, 1035, 1045, 1048, 1051,	\BKM@driver	633, 659, 662, 709, 710,
	1055, 1065, 1234, 1244, 1249,		714, 717, 719, 722, 731, 734,
	1254, 1258, 1268, 1274, 1286,		737, 742, 745, 748, 751, 761, 763
	1290, 1294, 1299, 1304, 1403,	\BKM@DvipdfmxOutlineOpentru	700, 705
	1413, 1422, 1431, 1440, 1448,	\BKM@EndHook ..	1657, 1659, 1664, 1671
	1458, 1471, 1478, 1484, 1487, 1499	\BKM@entry	1507, 1561, 1643
\BKM@attr		\BKM@EscapeHex	132,
	1221, 1224, 1228, 1230, 1232,		1521, 1555, 1556, 1557, 1558, 1559
	1304, 1394, 1397, 1401, 1495, 1497	\BKM@EscapeName	
\BKM@auxentry			120, 878, 1025, 1267, 1447
	1568, 1569, 1570, 1571, 1572,	\BKM@EscapeString	
	1573, 1574, 1575, 1579, 1580, 1591		126, 866, 884, 904, 907, 1013,
\BKM@CalcExpr			1034, 1047, 1050, 1253, 1289,
	101, 299, 777, 837, 897, 1281, 1541		1293, 1310, 1430, 1457, 1477, 1483
\BKM@CalcParam	449,	\BKM@file	1364, 1365, 1381
	463, 471, 479, 487, 506, 518, 530	\BKM@filename	1358, 1359, 1365
\BKM@CalcResult ..	777, 778, 1541, 1543	\BKM@FLAGS	849, 938, 939,
\BKM@CheckParam			999, 1082, 1083, 1553, 1576, 1577
	404, 407, 410, 413, 440, 440	\BKM@getx	834, 947,
\BKM@CheckRect	416, 453, 453		984, 1090, 1219, 1392, 1534, 1586
\BKM@CheckView	391, 395, 395	\BKM@gotor	851,
\BKM@CheckViewType	396, 398		907, 911, 1001, 1050, 1054, 1557
\BKM@CheckXYZ	419, 494	\BKM@gtemp	781, 783
\BKM@color		\BKM@hook	187, 618, 620
	361, 363, 364, 934, 936, 1059, 1062	\BKM@HookNext ..	182, 184, 194, 197, 199
\BKM@currentlevel	190, 259,	\BKM@HookNextClear	185, 196, 199
	289, 299, 302, 774, 777, 781, 783	\BKM@id	813, 822, 823, 829, 838,
\BKM@DefGotoNameAction ..	691, 1274, 1309		963, 972, 973, 979, 988, 1067,
\BKM@DefineDriverKey ..	631, 640,		1509, 1523, 1524, 1529, 1537, 1562
	641, 642, 643, 644, 645, 646, 647	\BKM@InitSourceLocation ..	1516, 1597
\BKM@depth		\BKM@level	
	216, 218, 223, 240, 243, 249, 786		190, 263, 280, 283, 299, 301,
\BKM@dest	852,		830, 836, 839, 920, 980, 986,
	884, 888, 893, 904, 905, 1002,		989, 1070, 1530, 1536, 1538, 1564
	1034, 1035, 1038, 1047, 1048, 1555	\BKM@LuaTeX@InitFile	1599, 1606
\BKM@DisableOptions		\BKM@MacroCurrentLevel	262, 289
	202, 555, 635, 656, 676	\BKM@named	
\BKM@DO@color ..	1226, 1228, 1399, 1401		853, 878, 880, 1003, 1025, 1029
\BKM@DO@dest		\BKM@nil	325, 327
	1236, 1273, 1274, 1277, 1288,	\BKM@null ..	502, 504, 514, 516, 524, 528
	1289, 1290, 1310, 1405, 1456,	\BKM@numberedfalse	309
	1457, 1460, 1464, 1476, 1477, 1479	\BKM@numberedtrue	306
\BKM@DO@entry ..	1210, 1377, 1383, 1643	\BKM@okfalse	612
\BKM@DO@flags ..	1222, 1224, 1395, 1397	\BKM@oktrue	576
\BKM@DO@gotor	1235, 1292,	\BKM@openlevel ...	213, 922, 1070, 1564
	1293, 1298, 1404, 1482, 1483, 1486		
\BKM@DO@id	1220, 1393		
\BKM@DO@named			
	1237, 1267, 1269, 1406, 1447, 1451		

\BKM@page	377, 378, 380, 381, 384, 388, 856, 863, 894, 895, 897, 902, 1006, 1010, 1039, 1040, 1045
\BKM@param	221, 222, 225, 226, 227, 236, 240, 244, 261, 262, 263, 265, 266, 267, 276, 280, 284, 441, 442, 447, 451, 458, 459, 460, 465, 466, 467, 468, 473, 474, 475, 476, 481, 482, 483, 484, 489, 498, 499, 501, 502, 509, 510, 511, 513, 514, 521, 522, 523, 524, 526, 533, 547, 549
\BKM@parent	978, 987, 1066
\BKM@PatchHyperrefOption	321, 333, 334, 335
\BKM@pdfmark@out	1361, 1362
\BKM@prev	822, 827, 835, 839, 843, 972, 976, 985, 987, 989, 993, 1523, 1527, 1535, 1538, 1540, 1542, 1548
\BKM@PrintStyle	357, 849, 999, 1553
\BKM@PSHeaderFile	1337, 1345, 1353, 1359
\BKM@rawaction	854, 875, 1004, 1022, 1558
\BKM@RGBcolor	1060, 1078, 1080, 1095, 1109, 1110, 1115, 1116, 1120, 1123
\BKM@SetDepthOrLevel	240, 243, 250, 280, 283
\BKM@setup	180, 821, 971, 1518
\BKM@setupnext	196
\BKM@SourceLocation	1242, 1315, 1411
\BKM@srcfile	1519, 1521, 1600, 1602, 1612
\BKM@srrcline	1598
\BKM@startatrootfalse	292, 828, 977, 1528
\BKM@startatroottrue	295
\BKM@StyleCall	567, 570
\BKM@StyleCurrent	577, 578, 585, 592, 597, 611
\BKM@StyleEntry	579, 590, 592, 604
\BKM@StyleEntryCheck	579, 609
\BKM@StyleStack	580, 591, 593, 605, 606, 615
\BKM@StyleStackPop	599, 603
\BKM@swfalse	832, 841, 982, 991, 1532, 1546
\BKM@swtrue	824, 974, 1525
\BKM@temp	227, 228, 229, 230, 267, 268, 269, 270, 365, 371, 372, 373, 374, 375, 431, 432, 433, 434, 457, 461, 469, 477, 485, 490, 499, 500, 504, 511, 512, 516, 610, 611, 708, 709, 712, 714, 719, 722, 729, 731, 737, 740, 742, 748, 751
\BKM@TestViewType	401, 402, 403, 406, 409, 412, 415, 418, 430
\BKM@title	848, 933, 997, 1085, 1552, 1559, 1581
\BKM@toHexDigit	1111, 1117, 1126
\BKM@toRGB	1062, 1094
\BKM@toRGBComponent	1096, 1097, 1098, 1100
\BKM@type	399, 400, 423, 433, 444, 491, 788, 789
\BKM@UnescapeHex	138, 1216, 1218, 1252, 1257, 1273, 1288, 1292, 1388, 1391, 1429, 1439, 1456, 1476, 1482
\BKM@uri	855, 866, 870, 1005, 1013, 1017, 1556
\BKM@view	393, 394, 426, 434, 451, 465, 473, 481, 489, 509, 521, 526, 860, 861, 863, 899, 900, 902, 1042, 1043, 1045
\BKM@vtex@leftparen	1144
\BKM@vtex@one	1174
\BKM@vtex@rightparen	1154
\BKM@vtex@three	1194
\BKM@vtex@title	998, 1135
\BKM@vtex@two	1184
\BKM@vtex@zero	1164
\BKM@write	1366, 1367, 1368, 1374, 1376, 1380, 1490, 1491, 1493, 1497, 1499, 1500
\BKM@x@abslevel	837, 950
\BKM@x@chlds	1305, 1492, 1493, 1541, 1589
\BKM@x@level	836, 949, 986, 1092, 1536, 1543, 1588
\BKM@x@parent	843, 948, 993, 1091, 1543, 1548, 1587
\bookmark	15, 16, 26, 62, 63, 64, 65, 67, 71, 75, 79, 85, 86, 87, 88, 89, 94, 688, 770, 802, 817, 967, 1513
\bookmark@bold	354
\bookmark@color	364
\bookmark@depth	249
\bookmark@dest	371
\bookmark@driver	659
\bookmark@gotor	374
\bookmark@italic	351
\bookmark@level	301
\bookmark@named	372
\bookmark@numbered	318
\bookmark@open	209
\bookmark@page	389
\bookmark@rawaction	375
\bookmark@text	820, 848, 970, 997, 1517, 1552
\bookmark@uri	373
\bookmark@view	394
\BookmarkAtEnd	7, 13, 680, 1649, 1656
\bookmarkdefinestyle	6, 559, 681
\BookmarkDriverDefault	661, 671
\bookmarkget	6, 622, 622, 682
\bookmarksetup	11, 14, 35, 40, 46, 52, 57, 61, 179, 181, 184, 330, 595, 679
\bookmarksetupnext	193
\bookmarknumberline	793, 798

C

\c@tocdepth	214, 216, 223
\calc	73, 532, 536

\catcode	1133, 1134	\hyper@anchorstart	771
\chapternumberline	795, 800	\hypertarget	23
\chardef	651, 653, 699		
\count@	105, 106, 108, 253, 257		
\csname	102, 244, 284, 322, 338, 345, 367, 368, 597, 628, 649, 650, 829, 835, 838, 847, 979, 985, 988, 1220, 1393, 1529, 1535, 1537, 1542, 1554, 1592, 1594		
\currentpdfbookmark	685, 773		
\currfilepath	1602		
D			
\DeclareBoolOption	200, 208, 290, 291, 303, 554, 1630		
\DeclareComplementaryOption	201		
\DeclareLocalOptions	154		
\DeclareStringOption	212, 214, 259, 366, 616, 617, 1629, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641		
\define@key	220, 260, 298, 337, 344, 360, 376, 390, 566, 619, 632, 648		
\dimen@	539, 541, 544, 546, 547, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1114, 1117		
\dimen@ii	1107, 1108, 1111, 1113, 1114		
\dimexpr	541		
\directlua	1614		
\DisableKeyvalOption	203, 205, 556, 636, 657		
\divide	1106, 1108		
\documentclass	2		
E			
\EdefEscapeHex	135		
\EdefEscapeName	123		
\EdefEscapeString	129		
\EdefUnescapeHex	139		
\end	25, 95		
\endcsname	102, 244, 284, 322, 338, 345, 367, 368, 597, 628, 649, 650, 829, 835, 838, 847, 979, 985, 988, 1220, 1393, 1529, 1535, 1537, 1542, 1554, 1592, 1594		
\endinput	692, 727, 756, 766, 1654		
G			
\g@addto@macro	306, 309, 312, 315, 555, 635, 656, 1657		
H			
\hbox	252		
\headheight	73		
\headsep	73		
\Hy@bookmarksdepth	218		
\Hy@bookmarksnumberedfalse	315		
\Hy@bookmarksnumberedtrue	312		
\Hy@bookmarkstype	789		
\Hy@numberline	792, 793, 794, 795		
\Hy@writebookmark	689, 785		
\HyColor@BookmarkColor	361		
\hyper@anchorend	771		
		I	
		\if@filesw	818, 968, 1363, 1514
		\ifBKM@atend	1647, 1662, 1669
		\ifBKM@DO@open	1305, 1493
		\ifBKM@draft	677
		\ifBKM@DvipdfmxOutlineOpen	694, 917
		\ifBKM@keeplevel	188
		\ifBKM@numbered	313, 316, 319, 791
		\ifBKM@ok	569, 581
		\ifBKM@open	210, 919, 1069, 1563
		\ifBKM@startatroot	293, 296, 827, 976, 1527
		\ifBKM@sw	816, 825, 966, 975, 1512, 1526
		\ifcase	228, 268, 1127
		\ifdim	697, 1102, 1103
		\iffalse	293, 310, 316
		\ifHy@bookmarksnumbered	304, 307, 310
		\ifHy@bookmarksopen	208
		\ifluatex	1606
		\ifnum	229, 230, 269, 270, 352, 355, 381, 490, 704, 786, 827, 836, 920, 938, 976, 986, 1070, 1082, 1492, 1527, 1536, 1540, 1564, 1576, 1607
		\ifpdf	662, 713
		\iftrue	296, 307, 313, 338, 345
		\ifvtx	668, 741
		\ifvtexpdf	957
		\ifx	102, 121, 127, 133, 182, 222, 228, 262, 268, 338, 345, 378, 433, 442, 459, 467, 475, 483, 501, 504, 513, 516, 523, 536, 611, 649, 709, 714, 722, 731, 742, 751, 789, 851, 852, 853, 854, 855, 856, 860, 893, 894, 899, 934, 1001, 1002, 1003, 1004, 1005, 1006, 1038, 1039, 1042, 1059, 1078, 1214, 1222, 1226, 1230, 1235, 1236, 1237, 1238, 1239, 1240, 1246, 1277, 1278, 1283, 1316, 1317, 1323, 1386, 1395, 1399, 1404, 1405, 1406, 1407, 1408, 1409, 1419, 1464, 1465, 1468, 1495, 1519, 1592, 1600
		\ifxetex	665, 696, 730
		\immediate	1365, 1381, 1560
		\InputIfFileExists	660, 761
		\inputlineno	1598
		J	
		\jobname	1358
		K	
		\kvsetkeys	179, 1212, 1385
		L	
		\ltx@empty	182, 197
		\ltx@firstofone	921
		\ltx@GlobalAppendToMacro	194
		\ltx@gobble	679, 680, 682

