

# The bookmark package

Heiko Oberdiek\*

<heiko.oberdiek at gmail.com>

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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

<b>1</b>	<b>Documentation</b>	<b>3</b>
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
<b>2</b>	<b>Example</b>	<b>8</b>
<b>3</b>	<b>Implementation</b>	<b>10</b>
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<sub>E</sub>X</code>	27
3.4	Driver for <code>pdfT<sub>E</sub>X</code>	31
3.5	Drivers with <code>pdfmark specials</code>	34
3.5.1	Driver <code>dvips</code>	34
3.5.2	Driver <code>dvipsone</code>	34

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\*Please report any issues at <https://github.com/ho-tex/oberdiek/issues>

3.5.3	Driver textures	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
<b>4</b>	<b>Installation</b>	<b>41</b>
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
<b>5</b>	<b>Catalogue</b>	<b>42</b>
<b>6</b>	<b>References</b>	<b>43</b>
<b>7</b>	<b>History</b>	<b>43</b>
[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
[2016/05/16 v1.25]		46
[2016/05/17 v1.26]		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 `\BookmarkDriverDefault`, e.g.:

```
\def\BookmarkDriverDefault{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  $\epsilon$ -TeX's `\dimexpr` is used. Example:

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

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

**named:** Named action name:

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

**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 Lua $\TeX$  (independently from DVI or PDF modus) is running, then its `status.filename` is used automatically.
- Package `\currfile` [2] redefines  $\LaTeX$  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`.

`\bookmarkdefinestyle {<name>} {<key value list>}`

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.

`\bookmarkget {<option>}`

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, gonor, 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
bookmarksdepth	depth
bookmarksopen	open
bookmarksopenlevel	openlevel
bookmarksnumbered	numbered

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`, `dvipson`, `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  $\text{\LaTeX}$  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}[2019/06/04]
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"}
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 \end{example}

```

## 3 Implementation

### 3.1 Package

```
97 <*package>
98 \NeedsTeXFormat{LaTeX2e}
99 \ProvidesPackage{bookmark}%
100 [2019/06/04 v1.27 PDF bookmarks (HO)]%
```

#### 3.1.1 Requirements

$\varepsilon$ - $\text{\TeX}$ .

$\backslash\text{BKM@CalcExpr}$

```
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 pdf $\text{\TeX}$ .

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

$\backslash\text{BKM@EscapeName}$

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

$\backslash\text{BKM@EscapeString}$

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

$\backslash\text{BKM@EscapeHex}$

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

$\backslash\text{BKM@UnescapeHex}$

```
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#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#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     \PackageWarning{bookmark}{%
573       Ignoring unknown style `#1'%
574     }%
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{dvipdfm}
645 \BKM@DefineDriverKey{dvipdfmx}
646 \BKM@DefineDriverKey{xetex}
647 \BKM@DefineDriverKey{vtex}
648 \define@key{BKM}{dvipdfmx-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}{dvipdfmx-outline-open}%
658 }
```

`\bookmark@driver`

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

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

`\BookmarkDriverDefault`

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

`\BKM@driver` Lua<sub>T</sub><sub>E</sub>X and pdf<sub>T</sub><sub>E</sub>X share driver.

```
662 \ifpdf
663   \def\BKM@driver{pdftex}%
664   \ifx\pdfoutline\@undefined
665     \ifx\pdfextension\@undefined\else
666       \protected\def\pdfoutline{\pdfextension outline }
667     \fi
668   \fi
669 \else
```

```

670 \ifxetex
671   \def\BKM@driver{dvipdfm}%
672 \else
673   \ifvtex
674     \def\BKM@driver{vtex}%
675   \else
676     \edef\BKM@driver{\BookmarkDriverDefault}%
677   \fi
678 \fi
679 \fi

```

### Process options.

```

680 \ProcessKeyvalOptions*
681 \BKM@DisableOptions

```

### Option draft

```

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

```

### Driver validation and loading.

```

699 \newif\ifBKM@DvipdfmxOutlineOpen
700 \ltx@ifundefined{SpecialDvipdfmxOutlineOpen}{%
701   \ifxetex
702     \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
703     \else
704       \chardef\SpecialDvipdfmxOutlineOpen\ltx@one
705       \BKM@DvipdfmxOutlineOpentruetrue
706     \fi
707   \fi
708 }{%
709   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
710     \BKM@DvipdfmxOutlineOpentruetrue
711   \fi
712 }

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

```

```

724 \let\BKM@driver\BKM@temp
725 \fi
726 \else
727 \ifx\BKM@temp\BKM@driver
728 \PackageError{bookmark}{%
729   Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
730   Package loading is aborted%
731 }\@ehc
732 \expandafter\expandafter\expandafter\endinput
733 \fi
734 \def\BKM@temp{dvipdfm}%
735 \ifxetex
736 \ifx\BKM@temp\BKM@driver
737 \else
738 \PackageWarningNoLine{bookmark}{%
739   Wrong driver `\'BKM@driver',\MessageBreak
740   using `dvipdfm' for XeTeX instead%
741 }%
742 \let\BKM@driver\BKM@temp
743 \fi
744 \else
745 \def\BKM@temp{vtex}%
746 \ifvtex
747 \ifx\BKM@temp\BKM@driver
748 \else
749 \PackageWarningNoLine{bookmark}{%
750   Wrong driver `\'BKM@driver',\MessageBreak
751   using `vtex' for VTeX instead%
752 }%
753 \let\BKM@driver\BKM@temp
754 \fi
755 \else
756 \ifx\BKM@temp\BKM@driver
757 \PackageError{bookmark}{%
758   Wrong driver, VTeX is not running in PDF mode.\MessageBreak
759   Package loading is aborted%
760 }\@ehc
761 \expandafter\expandafter\expandafter\endinput
762 \fi
763 \fi
764 \fi
765 \fi
766 \InputIfFileExists{bkm-\BKM@driver.def}{-}{-}%
767 \PackageError{bookmark}{%
768   Unsupported driver `\'BKM@driver'.\MessageBreak
769   Package loading is aborted%
770 }\@ehc
771 \endinput
772 }

```

### 3.1.9 Compatibility for hyperref

\pdfbookmark

```

773 \let\pdfbookmark\ltx@undefined
774 \newcommand*{\pdfbookmark}[3][0]{%
775   \bookmark[level=#1,dest={#3.#1}]{#2}%
776   \hyper@anchorstart{#3.#1}\hyper@anchorend
777 }

```

\currentpdfbookmark

```

778 \def\currentpdfbookmark{%
779   \pdfbookmark[\BKM@currentlevel]%

```

```
780 }
```

```
\subpdfbookmark
```

```
781 \def\subpdfbookmark{%  
782 \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%  
783 \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%  
784 }
```

```
\belowpdfbookmark
```

```
785 \def\belowpdfbookmark#1#2{%  
786 \xdef\BKM@gtemp{\number\BKM@currentlevel}%  
787 \subpdfbookmark{#1}{#2}%  
788 \global\let\BKM@currentlevel\BKM@gtemp  
789 }
```

Section number, text, label, level, file

```
\Hy@writebookmark
```

```
790 \def\Hy@writebookmark#1#2#3#4#5{%  
791 \ifnum#4>\BKM@depth\relax  
792 \else  
793 \def\BKM@type{#5}%  
794 \ifx\BKM@type\Hy@bookmarkstype  
795 \begingroup  
796 \ifBKM@numbered  
797 \let\numberline\Hy@numberline  
798 \let\booknumberline\Hy@numberline  
799 \let\partnumberline\Hy@numberline  
800 \let\chapternumberline\Hy@numberline  
801 \else  
802 \let\numberline\@gobble  
803 \let\booknumberline\@gobble  
804 \let\partnumberline\@gobble  
805 \let\chapternumberline\@gobble  
806 \fi  
807 \bookmark[level=#4,dest={#3}]{#2}%  
808 \endgroup  
809 \fi  
810 \fi  
811 }
```

```
\ReadBookmarks
```

```
812 \let\ReadBookmarks\relax  
  
813 \</package>
```

## 3.2 Driver for dvipdfm

```
814 \<dvipdfm>  
815 \NeedsTeXFormat{LaTeX2e}  
816 \ProvidesFile{bkm-dvipdfm.def}%  
817 [2019/06/04 v1.27 bookmark driver for dvipdfm (HO)]%
```

```
\BKM@id
```

```
818 \newcount\BKM@id  
819 \BKM@id=\z@
```

```
\BKM@0
```

```
820 \@namedef{BKM@0}{000}
```

```
\ifBKM@sw
```

```
821 \newif\ifBKM@sw
```



\bookmark

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

```

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

```

```

945     \fi
946     \BKM@action
947     >>%
948   }%
949 \endgroup
950 \fi
951 }

```

\BKM@getx

```

952 \def\BKM@getx#1#2#3{%
953   \def\BKM@x@parent{#1}%
954   \def\BKM@x@level{#2}%
955   \def\BKM@x@abslevel{#3}%
956 }

957 </dvipdfm>

```

### 3.3 Driver for VTeX

```

958 <*vtex>
959 \NeedsTeXFormat{LaTeX2e}
960 \ProvidesFile{bkm-vtex.def}%
961   [2019/06/04 v1.27 bookmark driver for VTeX (HO)]%

962 \ifvtexpdf
963 \else
964   \PackageWarningNoLine{bookmark}{%
965     The VTeX driver only supports PDF mode%
966   }%
967 \fi

```

\BKM@id

```

968 \newcount\BKM@id
969 \BKM@id=\z@

```

\BKM@0

```

970 \@namedef{BKM@0}{00}

```

\ifBKM@sw

```

971 \newif\ifBKM@sw

```

\bookmark

```

972 \newcommand*{\bookmark}[2][ ]{%
973   \if@filesw
974     \begingroup
975     \def\bookmark@text{#2}%
976     \BKM@setup{#1}%
977     \edef\BKM@prev{\the\BKM@id}%
978     \global\advance\BKM@id\@ne
979     \BKM@swtrue
980     \@whilesw\ifBKM@sw\fi{%
981       \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
982         \BKM@startatrootfalse
983         \def\BKM@parent{0}%
984         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
985           0{\BKM@level}%
986         }%
987         \BKM@swfalse
988       \else
989         \expandafter\expandafter\expandafter\BKM@getx
990           \csname BKM@\BKM@prev\endcsname
991         \ifnum\BKM@level>\BKM@x@level\relax
992           \let\BKM@parent\BKM@prev

```

```

993      \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
994      {\BKM@prev}{\BKM@level}%
995      }%
996      \BKM@swfalse
997      \else
998      \let\BKM@prev\BKM@x@parent
999      \fi
1000     \fi
1001   }%
1002   \pdfstringdef\BKM@title{\bookmark@text}%
1003   \BKM@vtex@title
1004   \edef\BKM@FLAGS{\BKM@PrintStyle}%
1005   \let\BKM@action\@empty
1006   \ifx\BKM@goto\@empty
1007     \ifx\BKM@dest\@empty
1008       \ifx\BKM@named\@empty
1009         \ifx\BKM@rawaction\@empty
1010           \ifx\BKM@uri\@empty
1011             \ifx\BKM@page\@empty
1012               \PackageError{bookmark}{Missing action}\@ehc
1013               \def\BKM@action{!1}%
1014             \else
1015               \edef\BKM@action{!\BKM@page}%
1016             \fi
1017           \else
1018             \BKM@EscapeString\BKM@uri
1019             \edef\BKM@action{%
1020               <u=%
1021               /S/URI%
1022               /URI(\BKM@uri)%
1023               >%
1024             }%
1025           \fi
1026         \else
1027           \edef\BKM@action{<u=\BKM@rawaction>}%
1028         \fi
1029       \else
1030         \BKM@EscapeName\BKM@named
1031         \edef\BKM@action{%
1032           <u=%
1033           /S/Named%
1034           /N/\BKM@named
1035           >%
1036         }%
1037       \fi
1038     \else
1039       \BKM@EscapeString\BKM@dest
1040       \edef\BKM@action{\BKM@dest}%
1041     \fi
1042   \else
1043     \ifx\BKM@dest\@empty
1044       \ifx\BKM@page\@empty
1045         \def\BKM@page{1}%
1046       \fi
1047       \ifx\BKM@view\@empty
1048         \def\BKM@view{Fit}%
1049       \fi
1050       \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
1051     \else
1052       \BKM@EscapeString\BKM@dest
1053       \edef\BKM@action{/D(\BKM@dest)}%
1054     \fi

```

```

1055 \BKM@EscapeString\BKM@goto
1056 \edef\BKM@action{%
1057   <u=%
1058     /S/GoToR%
1059     /F(\BKM@goto)%
1060     \BKM@action
1061   >>%
1062 }%
1063 \fi
1064 \ifx\BKM@color\@empty
1065   \let\BKM@RGBcolor\@empty
1066 \else
1067   \expandafter\BKM@toRGB\BKM@color\@nil
1068 \fi
1069 \special{%
1070   !outline \BKM@action;%
1071   p=\BKM@parent,%
1072   i=\number\BKM@id,%
1073   s=%
1074   \ifBKM@open
1075     \ifnum\BKM@level<\BKM@openlevel
1076       o%
1077     \else
1078       c%
1079     \fi
1080   \else
1081     c%
1082   \fi,%
1083   \ifx\BKM@RGBcolor\@empty
1084   \else
1085     c=\BKM@RGBcolor,%
1086   \fi
1087   \ifnum\BKM@FLAGS>\z@
1088     f=\BKM@FLAGS,%
1089   \fi
1090   t=\BKM@title
1091 }%
1092 \endgroup
1093 \fi
1094 }

```

\BKM@getx

```

1095 \def\BKM@getx#1#2{%
1096   \def\BKM@x@parent{#1}%
1097   \def\BKM@x@level{#2}%
1098 }

```

\BKM@toRGB

```

1099 \def\BKM@toRGB#1 #2 #3\@nil{%
1100   \let\BKM@RGBcolor\@empty
1101   \BKM@toRGBComponent{#1}%
1102   \BKM@toRGBComponent{#2}%
1103   \BKM@toRGBComponent{#3}%
1104 }

```

\BKM@toRGBComponent

```

1105 \def\BKM@toRGBComponent#1{%
1106   \dimen@=#1pt\relax
1107   \ifdim\dimen@>\z@
1108     \ifdim\dimen@<\p@
1109       \dimen@=255\dimen@
1110     \advance\dimen@ by 32768sp\relax

```

```

1111 \divide\dimen@ by 65536\relax
1112 \dimen@ii=\dimen@
1113 \divide\dimen@ii by 16\relax
1114 \edef\BKM@RGBcolor{%
1115   \BKM@RGBcolor
1116   \BKM@toHexDigit\dimen@ii
1117 }%
1118 \dimen@ii=16\dimen@ii
1119 \advance\dimen@-\dimen@ii
1120 \edef\BKM@RGBcolor{%
1121   \BKM@RGBcolor
1122   \BKM@toHexDigit\dimen@
1123 }%
1124 \else
1125   \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
1126 \fi
1127 \else
1128   \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
1129 \fi
1130 }

```

\BKM@toHexDigit

```

1131 \def\BKM@toHexDigit#1{%
1132   \ifcase\expandafter\@firstofone\expandafter{\number#1} %
1133     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
1134     8\or 9\or A\or B\or C\or D\or E\or F%
1135   \fi
1136 }

1137 \begingroup
1138 \catcode`\|=0 %
1139 \catcode`\=12 %

```

\BKM@vtex@title

```

1140 |gdef|BKM@vtex@title{%
1141   |@onelevel@sanitize|BKM@title
1142   |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
1143   |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
1144   |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
1145   |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
1146   |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
1147   |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
1148 }%

```

\BKM@vtex@leftparen

```

1149 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
1150   #1%
1151   |ifx||#2||%
1152   |else
1153     (%
1154     |ltx@ReturnAfterFi{%
1155       |BKM@vtex@leftparen#2|@nil
1156     }%
1157   |fi
1158 }%

```

\BKM@vtex@rightparen

```

1159 |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
1160   #1%
1161   |ifx||#2||%
1162   |else
1163     )%

```

```

1164     |ltx@ReturnAfterFi{%
1165     |BKM@vtex@rightparen#2|@nil
1166     }%
1167   |fi
1168 }%

\BKM@vtex@zero
1169 |gdef|BKM@vtex@zero#1\0#2|@nil{%
1170   #1%
1171   |ifx||#2||%
1172   |else
1173     |noexpand|hv@pdf@char0%
1174     |ltx@ReturnAfterFi{%
1175     |BKM@vtex@zero#2|@nil
1176     }%
1177   |fi
1178 }%

\BKM@vtex@one
1179 |gdef|BKM@vtex@one#1\1#2|@nil{%
1180   #1%
1181   |ifx||#2||%
1182   |else
1183     |noexpand|hv@pdf@char1%
1184     |ltx@ReturnAfterFi{%
1185     |BKM@vtex@one#2|@nil
1186     }%
1187   |fi
1188 }%

\BKM@vtex@two
1189 |gdef|BKM@vtex@two#1\2#2|@nil{%
1190   #1%
1191   |ifx||#2||%
1192   |else
1193     |noexpand|hv@pdf@char2%
1194     |ltx@ReturnAfterFi{%
1195     |BKM@vtex@two#2|@nil
1196     }%
1197   |fi
1198 }%

\BKM@vtex@three
1199 |gdef|BKM@vtex@three#1\3#2|@nil{%
1200   #1%
1201   |ifx||#2||%
1202   |else
1203     |noexpand|hv@pdf@char3%
1204     |ltx@ReturnAfterFi{%
1205     |BKM@vtex@three#2|@nil
1206     }%
1207   |fi
1208 }%

1209 |endgroup
1210 </vtex>

```

### 3.4 Driver for pdfTeX

```

1211 <*pdfTeX>
1212 \NeedsTeXFormat{LaTeX2e}
1213 \ProvidesFile{bkm-pdfTeX.def}%

```

\BKM@DO@entry

```

1215 \def\BKM@DO@entry#1#2{%
1216   \begingroup
1217   \kvsetkeys{BKM@DO}{#1}%
1218   \def\BKM@DO@title{#2}%
1219   \ifx\BKM@DO@srcfile\@empty
1220   \else
1221     \BKM@UnescapeHex\BKM@DO@srcfile
1222   \fi
1223   \BKM@UnescapeHex\BKM@DO@title
1224   \expandafter\expandafter\expandafter\BKM@getx
1225     \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1226   \let\BKM@attr\@empty
1227   \ifx\BKM@DO@flags\@empty
1228   \else
1229     \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1230   \fi
1231   \ifx\BKM@DO@color\@empty
1232   \else
1233     \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1234   \fi
1235   \ifx\BKM@attr\@empty
1236   \else
1237     \edef\BKM@attr{attr{\BKM@attr}}%
1238   \fi
1239   \let\BKM@action\@empty
1240   \ifx\BKM@DO@goto\@empty
1241     \ifx\BKM@DO@dest\@empty
1242       \ifx\BKM@DO@named\@empty
1243       \ifx\BKM@DO@rawaction\@empty
1244       \ifx\BKM@DO@uri\@empty
1245       \ifx\BKM@DO@page\@empty
1246         \PackageError{bookmark}{%
1247           Missing action\BKM@SourceLocation
1248         }\@ehc
1249       \edef\BKM@action{goto page1{/Fit}}%
1250     \else
1251       \ifx\BKM@DO@view\@empty
1252       \def\BKM@DO@view{Fit}%
1253     \fi
1254     \edef\BKM@action{goto page\BKM@DO@page{/ \BKM@DO@view}}%
1255   \fi
1256   \else
1257     \BKM@UnescapeHex\BKM@DO@uri
1258     \BKM@EscapeString\BKM@DO@uri
1259     \edef\BKM@action{user{<</S/URI/URI(\BKM@DO@uri)>>}}%
1260   \fi
1261   \else
1262     \BKM@UnescapeHex\BKM@DO@rawaction
1263     \edef\BKM@action{%
1264       user{%
1265         <<%
1266           \BKM@DO@rawaction
1267         >>%
1268       }%
1269     }%
1270   \fi
1271   \else
1272     \BKM@EscapeName\BKM@DO@named
1273     \edef\BKM@action{%
1274       user{<</S/Named/N/\BKM@DO@named>>}}%

```



```

1275     }%
1276     \fi
1277     \else
1278         \BKM@UnescapeHex\BKM@DO@dest
1279         \BKM@DefGotoNameAction\BKM@action\BKM@DO@dest
1280     \fi
1281     \else
1282         \ifx\BKM@DO@dest\@empty
1283             \ifx\BKM@DO@page\@empty
1284                 \def\BKM@DO@page{0}%
1285             \else
1286                 \BKM@CalcExpr\BKM@DO@page\BKM@DO@page-1%
1287             \fi
1288             \ifx\BKM@DO@view\@empty
1289                 \def\BKM@DO@view{Fit}%
1290             \fi
1291             \edef\BKM@action{/D[\BKM@DO@page/\BKM@DO@view]}%
1292         \else
1293             \BKM@UnescapeHex\BKM@DO@dest
1294             \BKM@EscapeString\BKM@DO@dest
1295             \edef\BKM@action{/D(\BKM@DO@dest)}%
1296         \fi
1297         \BKM@UnescapeHex\BKM@DO@gotor
1298         \BKM@EscapeString\BKM@DO@gotor
1299         \edef\BKM@action{%
1300             user{%
1301                 <<%
1302                 /S/GoToR%
1303                 /F(\BKM@DO@gotor)%
1304                 \BKM@action
1305                 >>%
1306             }%
1307         }%
1308     \fi
1309     \pdfoutline\BKM@attr\BKM@action
1310         count\ifBKM@DO@open\else-\fi\BKM@x@chlds
1311         {\BKM@DO@title}%
1312 \endgroup
1313 }

```

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

```

1314 \def\BKM@DefGotoNameAction#1#2{%
1315     \BKM@EscapeString\BKM@DO@dest
1316     \edef#1{goto name{#2}}%
1317 }

1318 </pdfTeX>
1319 <*pdfTeX j pdfmark>

```

\BKM@SourceLocation

```

1320 \def\BKM@SourceLocation{%
1321     \ifx\BKM@DO@srcfile\@empty
1322         \ifx\BKM@DO@srcline\@empty
1323             \else
1324                 .\MessageBreak
1325                 Source: line \BKM@DO@srcline
1326             \fi
1327         \else
1328             \ifx\BKM@DO@srcline\@empty
1329                 .\MessageBreak
1330                 Source: file ` \BKM@DO@srcfile'%
1331             \else

```

```

1332     .\MessageBreak
1333     Source: file `\'BKM@DO@srcfile', line \'BKM@DO@srcline
1334     \fi
1335     \fi
1336 }

1337 </pdfTeX j pdfmark>

```

## 3.5 Drivers with pdfmark specials

### 3.5.1 Driver dvips

```

1338 <*dvips>
1339 \NeedsTeXFormat{LaTeX2e}
1340 \ProvidesFile{bkm-dvips.def}%
1341 [2019/06/04 v1.27 bookmark driver for dvips (HO)]%

```

\BKM@PSHeaderFile

```

1342 \def\BKM@PSHeaderFile#1{%
1343   \special{header=#1}%
1344 }

1345 </dvips>

```

### 3.5.2 Driver dvipsone

```

1346 <*dvipsone>
1347 \NeedsTeXFormat{LaTeX2e}
1348 \ProvidesFile{bkm-dvipsone.def}%
1349 [2019/06/04 v1.27 bookmark driver for dvipsone (HO)]%

```

\BKM@PSHeaderFile

```

1350 \def\BKM@PSHeaderFile#1{%
1351   \special{header=#1}%
1352 }

1353 </dvipsone>

```

### 3.5.3 Driver textures

```

1354 <*textures>
1355 \NeedsTeXFormat{LaTeX2e}
1356 \ProvidesFile{bkm-textures.def}%
1357 [2019/06/04 v1.27 bookmark driver for textures (HO)]%

```

\BKM@PSHeaderFile

```

1358 \def\BKM@PSHeaderFile#1{%
1359   \special{prePostScriptfile #1}%
1360 }

1361 </textures>

```

### 3.5.4 Common part

```

1362 <*pdfmark>

```

\BKM@filename

```

1363 \def\BKM@filename{\jobname.out.ps}

1364 \BKM@PSHeaderFile\BKM@filename

1365 \RequirePackage{atveryend}[2009/12/07]
1366 \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.

```

1367 \def\BKM@pdfmark@out{%
1368   \if@filesw
1369     \newwrite\BKM@file
1370     \immediate\openout\BKM@file=\BKM@filename\relax
1371     \BKM@write{\@percentchar!}%
1372     \BKM@write{/pdfmark where{pop}}}%
1373     \BKM@write{%
1374       {%
1375         /globaldict where{pop globaldict}{userdict}ifelse%
1376         /pdfmark/cleartomark load put%
1377       }%
1378     }%
1379     \BKM@write{ifelse}%
1380   \else
1381     \let\BKM@write\@gobble
1382     \let\BKM@DO@entry\@gobbletwo
1383   \fi
1384 }
```

`\BKM@write`

```

1385 \def\BKM@write#1{%
1386   \immediate\write\BKM@file
1387 }
```

`\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`.

```

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

```

```

1421         /View[/Fit]%
1422     }%
1423     \else
1424         \ifx\BKM@DO@view\@empty
1425             \def\BKM@DO@view{Fit}%
1426         \fi
1427         \edef\BKM@action{%
1428             /Action/GoTo%
1429             /Page \BKM@DO@page
1430             /View[/\BKM@DO@view]%
1431         }%
1432     \fi
1433     \else
1434         \BKM@UnescapeHex\BKM@DO@uri
1435         \BKM@EscapeString\BKM@DO@uri
1436         \edef\BKM@action{%
1437             /Action<<%
1438             /Subtype/URI%
1439             /URI(\BKM@DO@uri)%
1440             >>%
1441         }%
1442     \fi
1443     \else
1444         \BKM@UnescapeHex\BKM@DO@rawaction
1445         \edef\BKM@action{%
1446             /Action<<%
1447             \BKM@DO@rawaction
1448             >>%
1449         }%
1450     \fi
1451     \else
1452         \BKM@EscapeName\BKM@DO@named
1453         \edef\BKM@action{%
1454             /Action<<%
1455             /Subtype/Named%
1456             /N/\BKM@DO@named
1457             >>%
1458         }%
1459     \fi
1460     \else
1461         \BKM@UnescapeHex\BKM@DO@dest
1462         \BKM@EscapeString\BKM@DO@dest
1463         \edef\BKM@action{%
1464             /Action/GoTo%
1465             /Dest(\BKM@DO@dest)cvn%
1466         }%
1467     \fi
1468     \else
1469         \ifx\BKM@DO@dest\@empty
1470             \ifx\BKM@DO@page\@empty
1471                 \def\BKM@DO@page{1}%
1472             \fi
1473             \ifx\BKM@DO@view\@empty
1474                 \def\BKM@DO@view{Fit}%
1475             \fi
1476             \edef\BKM@action{%
1477                 /Page \BKM@DO@page
1478                 /View[/\BKM@DO@view]%
1479             }%
1480         \else
1481             \BKM@UnescapeHex\BKM@DO@dest
1482             \BKM@EscapeString\BKM@DO@dest

```

```

1483 \edef\BKM@action{%
1484 /Dest(\BKM@DO@dest)cvn%
1485 }%
1486 \fi
1487 \BKM@UnescapeHex\BKM@DO@gotor
1488 \BKM@EscapeString\BKM@DO@gotor
1489 \edef\BKM@action{%
1490 /Action/GoToR%
1491 /File(\BKM@DO@gotor)%
1492 \BKM@action
1493 }%
1494 \fi
1495 \BKM@write{[]}%
1496 \BKM@write{/Title(\BKM@DO@title)}%
1497 \ifnum\BKM@x@chlds>\z@
1498 \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chlds}%
1499 \fi
1500 \ifx\BKM@attr\@empty
1501 \else
1502 \BKM@write{\BKM@attr}%
1503 \fi
1504 \BKM@write{\BKM@action}%
1505 \BKM@write{/OUT pdfmark}%
1506 \endgroup
1507 }
1508 </pdfmark>

```

### 3.6 Common part for pdftex and pdfmark

```
1509 <*pdftex j pdfmark>
```

#### 3.6.1 Write auxiliary file

```

1510 \RequirePackage{auxhook}
1511 \AddLineBeginMainAux{%
1512 \string\providecommand\string\BKM@entry[2]{}%
1513 }

\BKM@id
1514 \newcount\BKM@id
1515 \BKM@id=\z@

\BKM@0
1516 \@namedef{BKM@0}{000}

\ifBKM@sw
1517 \newif\ifBKM@sw

\bookmark
1518 \newcommand*{\bookmark}[2][]{%
1519 \if@filesw
1520 \begingroup
1521 \BKM@InitSourceLocation
1522 \def\bookmark@text{#2}%
1523 \BKM@setup{#1}%
1524 \ifx\BKM@srcfile\@empty
1525 \else
1526 \BKM@EscapeHex\BKM@srcfile
1527 \fi
1528 \edef\BKM@prev{\the\BKM@id}%
1529 \global\advance\BKM@id\@ne
1530 \BKM@swtrue

```

```

1531 \@whilesw\ifBKM@sw\fi{%
1532 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1533 \BKM@startatrootfalse
1534 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1535 0{\BKM@level}0%
1536 }%
1537 \BKM@swfalse
1538 \else
1539 \expandafter\expandafter\expandafter\BKM@getx
1540 \csname BKM@\BKM@prev\endcsname
1541 \ifnum\BKM@level>\BKM@x@level\relax
1542 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1543 {\BKM@prev}{\BKM@level}0%
1544 }%
1545 \ifnum\BKM@prev>\z@
1546 \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1547 \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1548 {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1549 }%
1550 \fi
1551 \BKM@swfalse
1552 \else
1553 \let\BKM@prev\BKM@x@parent
1554 \fi
1555 \fi
1556 }%
1557 \pdfstringdef\BKM@title{\bookmark@text}%
1558 \edef\BKM@FLAGS{\BKM@PrintStyle}%
1559 \csname BKM@HypDestOptHook\endcsname
1560 \BKM@EscapeHex\BKM@dest
1561 \BKM@EscapeHex\BKM@uri
1562 \BKM@EscapeHex\BKM@gotor
1563 \BKM@EscapeHex\BKM@rawaction
1564 \BKM@EscapeHex\BKM@title
1565 \immediate\write\@mainaux{%
1566 \string\BKM@entry{%
1567 id=\number\BKM@id
1568 \ifBKM@open
1569 \ifnum\BKM@level<\BKM@openlevel
1570 ,open%
1571 \fi
1572 \fi
1573 \BKM@auxentry{dest}%
1574 \BKM@auxentry{named}%
1575 \BKM@auxentry{uri}%
1576 \BKM@auxentry{gotor}%
1577 \BKM@auxentry{page}%
1578 \BKM@auxentry{view}%
1579 \BKM@auxentry{rawaction}%
1580 \BKM@auxentry{color}%
1581 \ifnum\BKM@FLAGS>\z@
1582 ,flags=\BKM@FLAGS
1583 \fi
1584 \BKM@auxentry{srcline}%
1585 \BKM@auxentry{srcfile}%
1586 }\BKM@title}%
1587 }%
1588 \endgroup
1589 \fi
1590 }

```

\BKM@getx

```

1591 \def\BKM@getx#1#2#3{%

```

```

1592 \def\BKM@x@parent{#1}%
1593 \def\BKM@x@level{#2}%
1594 \def\BKM@x@childs{#3}%
1595 }

\BKM@auxentry
1596 \def\BKM@auxentry#1{%
1597 \expandafter\ifx\csname BKM@#1\endcsname\@empty
1598 \else
1599 ,#1={\csname BKM@#1\endcsname}%
1600 \fi
1601 }

```

\BKM@InitSourceLocation

```

1602 \def\BKM@InitSourceLocation{%
1603 \edef\BKM@srcline{\the\inputlineno}%
1604 \BKM@LuaTeX@InitFile
1605 \ifx\BKM@srcfile\@empty
1606 \ltx@ifundefined{currfilepath}{}%
1607 \edef\BKM@srcfile{\currfilepath}%
1608 }%
1609 \fi
1610 }

```

\BKM@LuaTeX@InitFile

```

1611 \ifluatex
1612 \ifnum\luatexversion>36 %
1613 \def\BKM@LuaTeX@InitFile{%
1614 \begingroup
1615 \ltx@LocToksA={}%
1616 \edef\x{\endgroup
1617 \def\noexpand\BKM@srcfile{%
1618 \the\expandafter\ltx@LocToksA
1619 \directlua{%
1620 if status and status.filename then %
1621 tex.settoks('ltx@LocToksA', status.filename)%
1622 end%
1623 }%
1624 }%
1625 }\x
1626 }%
1627 \else
1628 \let\BKM@LuaTeX@InitFile\relax
1629 \fi
1630 \else
1631 \let\BKM@LuaTeX@InitFile\relax
1632 \fi

```

### 3.6.2 Read auxiliary data

```

1633 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1634 \DeclareStringOption[0]{id}
1635 \DeclareBoolOption{open}
1636 \DeclareStringOption{flags}
1637 \DeclareStringOption{color}
1638 \DeclareStringOption{dest}
1639 \DeclareStringOption{named}
1640 \DeclareStringOption{uri}
1641 \DeclareStringOption{goto}
1642 \DeclareStringOption{page}
1643 \DeclareStringOption{view}
1644 \DeclareStringOption{rawaction}

```

```

1645 \DeclareStringOption{srcline}
1646 \DeclareStringOption{srcfile}

1647 \AtBeginDocument{%
1648   \let\BKM@entry\BKM@DO@entry
1649 }

1650 </pdftex j pdfmark>

```

### 3.7 Option atend

#### 3.7.1 Hook

```

1651 <*package>

1652 \ifBKM@atend
1653 \else
\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
given.
1654 \newcommand{\BookmarkAtEnd}[1]{%
1655   \PackageWarning{bookmark}{%
1656     Ignored, because option `atend' is missing%
1657   }%
1658 }%

1659 \expandafter\endinput
1660 \fi

\BookmarkAtEnd

1661 \newcommand*{\BookmarkAtEnd}{%
1662   \g@addto@macro\BKM@EndHook
1663 }

1664 \let\BKM@EndHook\@empty
1665 </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.

```

1666 <*pdftex j pdfmark>
1667 \ifBKM@atend
1668   \AfterLastShipout{%
1669     \BKM@EndHook
1670   }%
1671 \fi
1672 </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.

```

1673 <*dvipdfm j vtex>

```



```

1674 \ifBKM@atend
1675 \RequirePackage{atendddvi}%
1676 \AtEndDvi{\BKM@EndHook}%
1677 \fi
1678 </dvipdfm j vtex>

```

## 4 Installation

### 4.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

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

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

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

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

TDS refers to the standard “A Directory Structure for T<sub>E</sub>X 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 T<sub>E</sub>X:

```
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>

---

<sup>1</sup><http://ctan.org/pkg/bookmark>

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

## 4.4 Refresh file name databases

If your  $\text{T}_{\text{E}}\text{X}$  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

**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`.

```
1679 <*catalogue>
1680 <?xml version='1.0' encoding='us-ascii'?>
1681 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
1682 <entry datestamp='$Date$' modifier='$Author$' id='bookmark'>
1683   <name>bookmark</name>
1684   <caption>A new bookmark (outline) organization for hyperref.</caption>
1685   <authorref id='auth:oberdiek' />
1686   <copyright owner='Heiko Oberdiek' year='2007-2011' />
1687   <license type='lppl1.3' />
1688   <version number='1.26' />
1689   <description>
1690     This package implements a new bookmark (outline) organization for
1691     package <xref refid='hyperref'>hyperref</xref>. Bookmark properties such
1692     as style and color can now be set. Other action types
1693     are available (URI, GoToR, Named). The bookmarks are
1694     generated in the first compile run. Package
1695     <xref refid='hyperref'>hyperref</xref> uses two runs.
1696   <p/>
```

```

1697   The package is part of the <xref refid='oberdiek'>oberdiek</xref>
1698   bundle.
1699 </description>
1700 <documentation details='Package documentation'
1701   href='ctan:/macros/latex/contrib/oberdiek/bookmark.pdf'/>
1702 <ctan file='true' path='/macros/latex/contrib/oberdiek/bookmark.dtx'/>
1703 <miktex location='oberdiek'/>
1704 <texlive location='oberdiek'/>
1705 <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip'/>
1706 </entry>
1707 </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-pdf<sub>T</sub><sub>E</sub>X users.

### [2007/02/21 v0.3]

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

**[2007/04/09 v0.8]**

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

**[2007/04/25 v0.9]**

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

**[2007/05/29 v1.0]**

- Bug fix in code for second parameter of `XYZ`.

**[2007/07/13 v1.1]**

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

**[2007/09/25 v1.2]**

- `pdfmark` driver respects `\nofiles`.

**[2008/08/08 v1.3]**

- Package `flags` replaced by package `bitset`. Now `flags` are also supported without  $\varepsilon$ - $\text{\TeX}$ .
- 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  $\text{\XeTeX}$ .

**[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  $\geq 0.9995$  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  $\varepsilon$ -TeX is not used. (Bug found by Martin Münch.)
- Fix in documentation. Also layout options work without  $\varepsilon$ -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`.

[2016/05/16 v1.25]

- Documentation updates.

[2016/05/17 v1.26]

- define `\pdfbookmark` to allow pdftex driver to be used with LuaTeX.

[2019/06/04 v1.27]

- unknown style options are ignored (issue 67)

## 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		1283, 1288, 1321, 1322, 1328,
<code>\"</code>	..... 33	1391, 1398, 1399, 1400, 1404,
<code>\(</code>	..... 1142, 1149	1408, 1409, 1410, 1411, 1412,
<code>\)</code>	..... 1143, 1159	1413, 1414, 1424, 1469, 1470,
<code>\@bookmarksopenlevel</code>	..... 213	1473, 1500, 1524, 1597, 1605, 1664
<code>\@car</code>	..... 227, 267, 421, 435	<code>\@firstofone</code> ..... 532, 582, 1132
<code>\@ehc</code>	..... 383, 425, 586,	<code>\@gobble</code> ..... 437, 587, 802, 803, 804, 805, 1381
	731, 760, 770, 862, 1012, 1248, 1417	<code>\@gobbletwo</code> ..... 606, 1382
<code>\@empty</code>	..... 121, 127, 133, 222,	<code>\@ifundefined</code> ..... 537, 538, 560, 571
	363, 378, 388, 393, 442, 459,	<code>\@mainaux</code> ..... 1565
	467, 475, 483, 501, 513, 523,	<code>\@namedef</code> ..... 564, 820, 970, 1516
	533, 855, 856, 857, 858, 859,	<code>\@ne</code> ..... 651, 828, 978, 1529
	860, 861, 865, 898, 899, 904,	<code>\@nil</code> ..... 227, 267, 396, 398, 404,
	939, 1005, 1006, 1007, 1008,	407, 410, 413, 428, 440, 454,
	1009, 1010, 1011, 1043, 1044,	456, 495, 497, 533, 535, 1067, 1099
	1047, 1064, 1065, 1083, 1100,	<code>\@onelevel@sanitize</code> ..... 226,
	1219, 1225, 1226, 1227, 1231,	266, 400, 432, 500, 512, 529, 578
	1235, 1239, 1240, 1241, 1242,	<code>\@percentchar</code> ..... 1371
	1243, 1244, 1245, 1251, 1282,	

\@undefined	664, 665	\BKM@currentlevel	190, 259, 289, 299, 302, 779, 782, 786, 788
\@whilesw	830, 980, 1531	\BKM@DefGotoNameAction	696, 1279, 1314
\\	1139	\BKM@DefineDriverKey	631, 640, 641, 642, 643, 644, 645, 646, 647
\	1138	\BKM@depth	216, 218, 223, 240, 243, 249, 791
<b>Numbers</b>			
\0	1144, 1169	\BKM@dest	857, 889, 893, 898, 909, 910, 1007, 1039, 1040, 1043, 1052, 1053, 1560
\1	1145, 1179	\BKM@DisableOptions	202, 555, 635, 656, 681
\2	1146, 1189	\BKM@DO@color	1231, 1233, 1404, 1406
\3	1147, 1199	\BKM@DO@dest	1241, 1278, 1279, 1282, 1293, 1294, 1295, 1315, 1410, 1461, 1462, 1465, 1469, 1481, 1482, 1484
<b>A</b>			
\AddLineBeginMainAux	1511	\BKM@DO@entry	1215, 1382, 1388, 1648
\advance	106, 828, 978, 1110, 1119, 1529	\BKM@DO@flags	1227, 1229, 1400, 1402
\AfterLastShipout	1366, 1668	\BKM@DO@gotor	1240, 1297, 1298, 1303, 1409, 1487, 1488, 1491
\AtBeginDocument	1647	\BKM@DO@id	1225, 1398
\AtEndDvi	1676	\BKM@DO@named	1242, 1272, 1274, 1411, 1452, 1456
<b>B</b>			
\begin	19, 22	\BKM@DO@page	1245, 1254, 1283, 1284, 1286, 1291, 1414, 1429, 1470, 1471, 1477
\belowpdfbookmark	692, 785	\BKM@DO@rawaction	1243, 1262, 1266, 1412, 1444, 1447
\bitsetClear	341, 348	\BKM@DO@srcfile	1219, 1221, 1321, 1330, 1333, 1391, 1393
\bitsetGet	352, 355	\BKM@DO@srcline	1322, 1325, 1328, 1333
\bitsetGetDec	358	\BKM@DO@title	1218, 1223, 1311, 1395, 1396, 1496
\bitsetReset	336	\BKM@DO@uri	1244, 1257, 1258, 1259, 1413, 1434, 1435, 1439
\bitsetSet	339, 346	\BKM@DO@view	1251, 1252, 1254, 1288, 1289, 1291, 1424, 1425, 1430, 1473, 1474, 1478
\BKM@0	820, 970, 1516	\BKM@driver	633, 659, 662, 714, 715, 719, 722, 724, 727, 736, 739, 742, 747, 750, 753, 756, 766, 768
\BKM@@@PatchHyperrefOption	325, 327	\BKM@DvipdfmxOutlineOpentru	705, 710
\BKM@@@CalcParam	533, 535	\BKM@EndHook	1662, 1664, 1669, 1676
\BKM@@@CheckRect	454, 456	\BKM@entry	1512, 1566, 1648
\BKM@@@CheckXYZ	495, 497	\BKM@EscapeHex	132, 1526, 1560, 1561, 1562, 1563, 1564
\BKM@@@page	389	\BKM@EscapeName	120, 883, 1030, 1272, 1452
\BKM@@@PatchHyperrefOption	322, 324	\BKM@EscapeString	126, 871, 889, 909, 912, 1018, 1039, 1052, 1055, 1258, 1294, 1298, 1315, 1435, 1462, 1482, 1488
\BKM@abslevel	831, 835, 842, 844, 936	\BKM@file	1369, 1370, 1386
\BKM@action	855, 863, 868, 872, 880, 884, 890, 907, 910, 913, 917, 946, 1005, 1013, 1015, 1019, 1027, 1031, 1040, 1050, 1053, 1056, 1060, 1070, 1239, 1249, 1254, 1259, 1263, 1273, 1279, 1291, 1295, 1299, 1304, 1309, 1408, 1418, 1427, 1436, 1445, 1453, 1463, 1476, 1483, 1489, 1492, 1504	\BKM@filename	1363, 1364, 1370
\BKM@attr	1226, 1229, 1233, 1235, 1237, 1309, 1399, 1402, 1406, 1500, 1502	\BKM@FLAGS	854, 943, 944, 1004, 1087, 1088, 1558, 1581, 1582
\BKM@auxentry	1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1584, 1585, 1596	\BKM@getx	839, 952, 989, 1095, 1224, 1397, 1539, 1591
\BKM@CalcExpr	101, 299, 782, 842, 902, 1286, 1546		
\BKM@CalcParam	449, 463, 471, 479, 487, 506, 518, 530		
\BKM@CalcResult	782, 783, 1546, 1548		
\BKM@CheckParam	404, 407, 410, 413, 440, 440		
\BKM@CheckRect	416, 453, 453		
\BKM@CheckView	391, 395, 395		
\BKM@CheckViewType	396, 398		
\BKM@CheckXYZ	419, 494		
\BKM@color	361, 363, 364, 939, 941, 1064, 1067		

\BKM@gotor	856, 912, 916, 1006, 1055, 1059, 1562
\BKM@gtemp	786, 788
\BKM@hook	187, 618, 620
\BKM@HookNext	182, 184, 194, 197, 199
\BKM@HookNextClear	185, 196, 199
\BKM@id	818, 827, 828, 834, 843, 968, 977, 978, 984, 993, 1072, 1514, 1528, 1529, 1534, 1542, 1567
\BKM@InitSourceLocation	1521, 1602
\BKM@level	190, 263, 280, 283, 299, 301, 835, 841, 844, 925, 985, 991, 994, 1075, 1535, 1541, 1543, 1569
\BKM@LuaTeX@InitFile	1604, 1611
\BKM@MacroCurrentLevel	262, 289
\BKM@named	858, 883, 885, 1008, 1030, 1034
\BKM@nil	325, 327
\BKM@null	502, 504, 514, 516, 524, 528
\BKM@numberedfalse	309
\BKM@numberedtrue	306
\BKM@okfalse	612
\BKM@oktrue	576
\BKM@openlevel	213, 927, 1075, 1569
\BKM@page	377, 378, 380, 381, 384, 388, 861, 868, 899, 900, 902, 907, 1011, 1015, 1044, 1045, 1050
\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	983, 992, 1071
\BKM@PatchHyperrefOption	321, 333, 334, 335
\BKM@pdfmark@out	1366, 1367
\BKM@prev	827, 832, 840, 844, 848, 977, 981, 990, 992, 994, 998, 1528, 1532, 1540, 1543, 1545, 1547, 1553
\BKM@PrintStyle	357, 854, 1004, 1558
\BKM@PSHeaderFile	1342, 1350, 1358, 1364
\BKM@rawaction	859, 880, 1009, 1027, 1563
\BKM@RGBcolor	1065, 1083, 1085, 1100, 1114, 1115, 1120, 1121, 1125, 1128
\BKM@SetDepthOrLevel	240, 243, 250, 280, 283
\BKM@setup	180, 826, 976, 1523
\BKM@setupnext	196
\BKM@SourceLocation	1247, 1320, 1416
\BKM@srcfile	1524, 1526, 1605, 1607, 1617
\BKM@srcline	1603
\BKM@startatrootfalse	292, 833, 982, 1533
\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	837, 846, 987, 996, 1537, 1551
\BKM@swtrue	829, 979, 1530
\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, 713, 714, 717, 719, 724, 727, 734, 736, 742, 745, 747, 753, 756
\BKM@TestViewType	401, 402, 403, 406, 409, 412, 415, 418, 430
\BKM@title	853, 938, 1002, 1090, 1557, 1564, 1586
\BKM@toHexDigit	1116, 1122, 1131
\BKM@toRGB	1067, 1099
\BKM@toRGBComponent	1101, 1102, 1103, 1105
\BKM@type	399, 400, 423, 433, 444, 491, 793, 794
\BKM@UnescapeHex	138, 1221, 1223, 1257, 1262, 1278, 1293, 1297, 1393, 1396, 1434, 1444, 1461, 1481, 1487
\BKM@uri	860, 871, 875, 1010, 1018, 1022, 1561
\BKM@view	393, 394, 426, 434, 451, 465, 473, 481, 489, 509, 521, 526, 865, 866, 868, 904, 905, 907, 1047, 1048, 1050
\BKM@vtex@leftparen	1149
\BKM@vtex@one	1179
\BKM@vtex@rightparen	1159
\BKM@vtex@three	1199
\BKM@vtex@title	1003, 1140
\BKM@vtex@two	1189
\BKM@vtex@zero	1169
\BKM@write	1371, 1372, 1373, 1379, 1381, 1385, 1495, 1496, 1498, 1502, 1504, 1505
\BKM@x@abslevel	842, 955
\BKM@x@chilids	1310, 1497, 1498, 1546, 1594
\BKM@x@level	841, 954, 991, 1097, 1541, 1548, 1593
\BKM@x@parent	848, 953, 998, 1096, 1548, 1553, 1592
\bookmark	15, 16, 26, 62, 63, 64, 65, 67, 71, 75, 79, 85, 86, 87, 88, 89, 94, 693, 775, 807, 822, 972, 1518



<code>\bookmark@bold</code> .....	354	<b>E</b>	
<code>\bookmark@color</code> .....	364	<code>\EdefEscapeHex</code> .....	135
<code>\bookmark@depth</code> .....	249	<code>\EdefEscapeName</code> .....	123
<code>\bookmark@dest</code> .....	371	<code>\EdefEscapeString</code> .....	129
<code>\bookmark@driver</code> .....	659	<code>\EdefUnescapeHex</code> .....	139
<code>\bookmark@gotor</code> .....	374	<code>\end</code> .....	25, 95
<code>\bookmark@italic</code> .....	351	<code>\endcsname</code> ....	102, 244, 284, 322,
<code>\bookmark@level</code> .....	301		338, 345, 367, 368, 597, 628,
<code>\bookmark@named</code> .....	372		649, 650, 834, 840, 843, 852,
<code>\bookmark@numbered</code> .....	318		984, 990, 993, 1225, 1398, 1534,
<code>\bookmark@open</code> .....	209		1540, 1542, 1547, 1559, 1597, 1599
<code>\bookmark@page</code> .....	389	<code>\endinginput</code> ....	697, 732, 761, 771, 1659
<code>\bookmark@rawaction</code> .....	375	<b>G</b>	
<code>\bookmark@text</code> .....		<code>\g@addto@macro</code> .....	306,
.. 825, 853, 975, 1002, 1522, 1557			309, 312, 315, 555, 635, 656, 1662
<code>\bookmark@uri</code> .....	373	<b>H</b>	
<code>\bookmark@view</code> .....	394	<code>\hbox</code> .....	252
<code>\BookmarkAtEnd</code> 7, 13, 685, 1654, 1661		<code>\headheight</code> .....	73
<code>\bookmarkdefinestyle</code> ....	6, 559, 686	<code>\headsep</code> .....	73
<code>\BookmarkDriverDefault</code> ....	661, 676	<code>\Hy@bookmarksdepth</code> .....	218
<code>\bookmarkget</code> .....	6, 622, 622, 687	<code>\Hy@bookmarksnumberedfalse</code> ...	315
<code>\bookmarksetup</code> 11, 14, 35, 40, 46, 52,		<code>\Hy@bookmarksnumberedtrue</code> ....	312
57, 61, 179, 181, 184, 330, 595, 684		<code>\Hy@bookmarkstype</code> .....	794
<code>\bookmarksetupnext</code> .....	193	<code>\Hy@numberline</code> ...	797, 798, 799, 800
<code>\booknumberline</code> .....	798, 803	<code>\Hy@writebookmark</code> .....	694, 790
<b>C</b>		<code>\HyColor@BookmarkColor</code> .....	361
<code>\c@tocdepth</code> .....	214, 216, 223	<code>\hyper@anchorend</code> .....	776
<code>\calc</code> .....	73, 532, 536	<code>\hyper@anchorstart</code> .....	776
<code>\catcode</code> .....	1138, 1139	<code>\hypertarget</code> .....	23
<code>\chapternumberline</code> .....	800, 805	<b>I</b>	
<code>\chardef</code> .....	651, 653, 704	<code>\if@files</code> .....	823, 973, 1368, 1519
<code>\count@</code> .....	105, 106, 108, 253, 257	<code>\ifBKM@atend</code> .....	1652, 1667, 1674
<code>\csname</code> .....	102, 244, 284, 322,	<code>\ifBKM@DO@open</code> .....	1310, 1498
	338, 345, 367, 368, 597, 628,	<code>\ifBKM@draft</code> .....	682
	649, 650, 834, 840, 843, 852,	<code>\ifBKM@DvipdfmxOutlineOpen</code> 699, 922	
	984, 990, 993, 1225, 1398, 1534,	<code>\ifBKM@keeplevel</code> .....	188
	1540, 1542, 1547, 1559, 1597, 1599	<code>\ifBKM@numbered</code> .	313, 316, 319, 796
<code>\currentpdfbookmark</code> .....	690, 778	<code>\ifBKM@ok</code> .....	569, 581
<code>\currfilepath</code> .....	1607	<code>\ifBKM@open</code> ....	210, 924, 1074, 1568
<b>D</b>		<code>\ifBKM@startatroot</code> .....	
<code>\DeclareBoolOption</code> .....			293, 296, 832, 981, 1532
	200, 208, 290, 291, 303, 554, 1635	<code>\ifBKM@sw</code> 821, 830, 971, 980, 1517, 1531	
<code>\DeclareComplementaryOption</code> ...	201	<code>\ifcase</code> .....	228, 268, 1132
<code>\DeclareLocalOptions</code> .....	154	<code>\ifdim</code> .....	702, 1107, 1108
<code>\DeclareStringOption</code> .....	212,	<code>\iffalse</code> .....	293, 310, 316
	214, 259, 366, 616, 617, 1634,	<code>\ifHy@bookmarksnumbered</code> 304, 307, 310	
	1636, 1637, 1638, 1639, 1640,	<code>\ifHy@bookmarksopen</code> .....	208
	1641, 1642, 1643, 1644, 1645, 1646	<code>\ifuatex</code> .....	1611
<code>\define@key</code> . 220, 260, 298, 337, 344,		<code>\ifnum</code> .....	229,
360, 376, 390, 566, 619, 632, 648			230, 269, 270, 352, 355, 381,
<code>\dimen@</code> .....	539, 541,		490, 709, 791, 832, 841, 925,
	544, 546, 547, 1106, 1107, 1108,		943, 981, 991, 1075, 1087, 1497,
	1109, 1110, 1111, 1112, 1119, 1122		1532, 1541, 1545, 1569, 1581, 1612
<code>\dimen@ii</code> . 1112, 1113, 1116, 1118, 1119		<code>\ifpdf</code> .....	662, 718
<code>\dimexpr</code> .....	541	<code>\iftrue</code> .....	296, 307, 313, 338, 345
<code>\directlua</code> .....	1619	<code>\ifvtex</code> .....	673, 746
<code>\DisableKeyvalOption</code> .....		<code>\ifvtexpdf</code> .....	962
	203, 205, 556, 636, 657	<code>\ifx</code> .....	102, 121, 127,
<code>\divide</code> .....	1111, 1113		133, 182, 222, 228, 262, 268,
<code>\documentclass</code> .....	2		338, 345, 378, 433, 442, 459,

467, 475, 483, 501, 504, 513, 516, 523, 536, 611, 649, 664, 665, 714, 719, 727, 736, 747, 756, 794, 856, 857, 858, 859, 860, 861, 865, 898, 899, 904, 939, 1006, 1007, 1008, 1009, 1010, 1011, 1043, 1044, 1047, 1064, 1083, 1219, 1227, 1231, 1235, 1240, 1241, 1242, 1243, 1244, 1245, 1251, 1282, 1283, 1288, 1321, 1322, 1328, 1391, 1400, 1404, 1409, 1410, 1411, 1412, 1413, 1414, 1424, 1469, 1470, 1473, 1500, 1524, 1597, 1605		\PackageError . . . . . 383, 422, 584, 728, 757, 767, 862, 1012, 1246, 1415
\ifxetex . . . . . 670, 701, 735		\PackageInfo . . . . . 562
\immediate . . . . . 1370, 1386, 1565		\PackageWarning . . . . . . . . . . 235, 275, 443, 491, 572, 1655
\InputIfFileExists . . . . . 660, 766		\PackageWarningNoLine . . . . . . . . . . 683, 721, 738, 749, 964
\inputlineno . . . . . 1603		\paperheight . . . . . 73
<b>J</b>		\part . . . . . 49
\jobname . . . . . 1363		\partnumberline . . . . . 799, 804
<b>K</b>		\pdfbookmark . . . 688, 689, 773, 779, 783
\kvsetkeys . . . . . 179, 1217, 1390		\pdfextension . . . . . 665, 666
<b>L</b>		\pdfoutline . . . . . 664, 666, 1309
\ltx@empty . . . . . 182, 197		\pdfstringdef . . . . . 853, 1002, 1557
\ltx@firstofone . . . . . 926		\ProcessKeyvalOptions . . . . . 680
\ltx@GlobalAppendToMacro . . . . . 194		\protected . . . . . 666
\ltx@gobble . . . . . 684, 685, 687		\providecommand . . . . . 661, 1512
\ltx@gobbletwo . . 686, 690, 691, 692, 696		\ProvidesFile . . . . . . . . . . 816, 960, 1213, 1340, 1348, 1356
\ltx@ifUndefined 215, 225, 265, 700, 1606		\ProvidesPackage . . . . . 99
\ltx@ifundefined . . . . . 624		<b>R</b>
\ltx@LocalAppendToMacro . . . . . 620		\ReadBookmarks . . . . . 695, 812
\ltx@LocToksA . . . . . 1615, 1618		\renewcommand . . . . . 694
\ltx@one . . . . . 210, 319, 352, 355, 704		\RequirePackage . . . . 119, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 1365, 1510, 1675
\ltx@space . . . . . 625, 627		\romannumeral . . . . . 623
\ltx@undefined . . . . . 688, 773		<b>S</b>
\ltx@zero . . . . . 210, 319, 352, 355		\section . . . . . 20, 39, 50, 55
\luatexversion . . . . . 1612		\setbox . . . . . 252
<b>M</b>		\setlength . . . . . 539, 541, 544
\maxdimen . . . . . 212		\SetupKeyvalOptions . . . . . 153, 1633
\MessageBreak . . . . . . . . . . 236, 276, 423, 444, 729, 739, 750, 758, 768, 1324, 1329, 1332		\space . . . . . 451, 465, 473, 481, 489, 509, 521, 526
<b>N</b>		\special . . . . . 921, 1069, 1343, 1351, 1359
\NeedsTeXFormat . . . . . 98, 815, 959, 1212, 1339, 1347, 1355		\SpecialDvipdfmxOutlineOpen . . . . . . . . . 651, 653, 704, 709
\newcommand 179, 193, 559, 622, 689, 693, 774, 822, 972, 1518, 1654, 1661		\ss . . . . . 33
\newcount . . . . . 818, 968, 1514		\strip@pt . . . . . 547
\newif . . . . . 569, 699, 821, 971, 1517		\subpdfbookmark . . . . . 691, 781, 787
\newpage . . . . . 34		\subsection . . . . . 21, 31, 33, 45, 56
\newwrite . . . . . 1369		\subsubsection . . . . . 32, 51
\number . . . . . 213, 380, 702, 786, 927, 1072, 1132, 1567		<b>T</b>
\numberline . . . . . 797, 802		\the . . . . . 108, 115, 257, 827, 834, 843, 977, 984, 993, 1528, 1534, 1542, 1603, 1618
\numexpr . . . . . 115		\topmargin . . . . . 73
<b>O</b>		<b>U</b>
\openout . . . . . 1370		\usepackage . . . . . 3, 4, 5
<b>P</b>		<b>W</b>
\p@ . . . . . 1108		\write . . . . . 1386, 1565
		<b>X</b>
		\x . . . . . 107, 110, 1616, 1625
		\XeTeXrevision . . . . . 702
		\XeTeXversion . . . . . 702
		<b>Z</b>
		\z@ . . . . . 252, 381, 490, 653, 709, 819, 832, 943, 969, 981, 1087, 1107, 1497, 1515, 1532, 1545, 1581