

# The bookmark package

Heiko Oberdiek\*

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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> | 4         |
| 1.2.2    | Driver options                                    | 4         |
| 1.2.3    | Layout options                                    | 4         |
| 1.2.4    | Action options                                    | 5         |
| 1.2.5    | Level options                                     | 6         |
| 1.2.6    | Style definitions                                 | 6         |
| 1.2.7    | Hook support                                      | 7         |
| 1.3      | Compatibility with <code>hyperref</code>          | 7         |
| 1.4      | Adding bookmarks at the end                       | 8         |
| 1.5      | Limitations/Todos                                 | 8         |
| <b>2</b> | <b>Example</b>                                    | <b>9</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                                    | 16        |
| 3.1.4    | Option <code>atend</code>                         | 20        |
| 3.1.5    | Option <code>style</code>                         | 21        |
| 3.1.6    | Options for source file location                  | 22        |
| 3.1.7    | Hook support                                      | 22        |
| 3.1.8    | Driver setup and loading                          | 22        |
| 3.1.9    | Compatibility for <code>hyperref</code>           | 25        |
| 3.2      | Driver for <code>dvipdfm</code>                   | 26        |
| 3.3      | Driver for <code>VT<sub>E</sub>X</code>           | 29        |
| 3.4      | Driver for <code>pdfT<sub>E</sub>X</code>         | 34        |
| 3.5      | Drivers with <code>pdfmark</code> specials        | 36        |

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

|          |  |           |
|----------|--|-----------|
| 3.5.1    | Driver dvips . . . . .                           | 36        |
| 3.5.2    | Driver dvipsone . . . . .                        | 36        |
| 3.5.3    | Driver textures . . . . .                        | 37        |
| 3.5.4    | Common part . . . . .                            | 37        |
| 3.6      | Common part for pdftex and pdfmark . . . . .     | 40        |
| 3.6.1    | Write auxiliary file . . . . .                   | 40        |
| 3.6.2    | Read auxiliary data . . . . .                    | 42        |
| 3.7      | Option atend . . . . .                           | 43        |
| 3.7.1    | Hook . . . . .                                   | 43        |
| 3.7.2    | Drivers using hooks at end of document . . . . . | 43        |
| 3.7.3    | Drivers using \AtEndDvi . . . . .                | 43        |
| <b>4</b> | <b>Installation</b> . . . . .                    | <b>44</b> |
| 4.1      | Download . . . . .                               | 44        |
| 4.2      | Bundle installation . . . . .                    | 44        |
| 4.3      | Package installation . . . . .                   | 44        |
| 4.4      | Refresh file name databases . . . . .            | 45        |
| 4.5      | Some details for the interested . . . . .        | 45        |
| <b>5</b> | <b>References</b> . . . . .                      | <b>45</b> |
| <b>6</b> | <b>History</b> . . . . .                         | <b>45</b> |
|          | [2007/02/19 v0.1] . . . . .                      | 45        |
|          | [2007/02/20 v0.2] . . . . .                      | 45        |
|          | [2007/02/21 v0.3] . . . . .                      | 45        |
|          | [2007/02/22 v0.4] . . . . .                      | 46        |
|          | [2007/03/02 v0.5] . . . . .                      | 46        |
|          | [2007/03/03 v0.6] . . . . .                      | 46        |
|          | [2007/03/07 v0.7] . . . . .                      | 46        |
|          | [2007/04/09 v0.8] . . . . .                      | 46        |
|          | [2007/04/25 v0.9] . . . . .                      | 46        |
|          | [2007/05/29 v1.0] . . . . .                      | 46        |
|          | [2007/07/13 v1.1] . . . . .                      | 46        |
|          | [2007/09/25 v1.2] . . . . .                      | 46        |
|          | [2008/08/08 v1.3] . . . . .                      | 46        |
|          | [2008/09/13 v1.4] . . . . .                      | 47        |
|          | [2009/08/13 v1.5] . . . . .                      | 47        |
|          | [2009/12/06 v1.6] . . . . .                      | 47        |
|          | [2009/12/07 v1.7] . . . . .                      | 47        |
|          | [2009/12/17 v1.8] . . . . .                      | 47        |
|          | [2010/03/30 v1.9] . . . . .                      | 47        |
|          | [2010/04/03 v1.10] . . . . .                     | 47        |
|          | [2010/04/04 v1.11] . . . . .                     | 47        |
|          | [2010/04/08 v1.12] . . . . .                     | 47        |
|          | [2010/07/23 v1.13] . . . . .                     | 47        |
|          | [2010/09/02 v1.14] . . . . .                     | 47        |
|          | [2010/09/25 v1.15] . . . . .                     | 47        |
|          | [2010/10/19 v1.16] . . . . .                     | 48        |
|          | [2010/10/25 v1.17] . . . . .                     | 48        |
|          | [2010/11/05 v1.18] . . . . .                     | 48        |
|          | [2011/03/20 v1.19] . . . . .                     | 48        |
|          | [2011/04/13 v1.20] . . . . .                     | 48        |
|          | [2011/04/21 v1.21] . . . . .                     | 48        |
|          | [2011/05/13 v1.22] . . . . .                     | 48        |

|                    |    |
|--------------------|----|
| [2011/09/19 v1.23] | 48 |
| [2011/12/02 v1.24] | 48 |
| [2016/05/16 v1.25] | 48 |
| [2016/05/17 v1.26] | 48 |
| [2019/06/04 v1.27] | 49 |
| [2019/12/03 v1.28] | 49 |

**7 Index** **49**

# 1 Documentation

## 1.1 Introduction

This package `bookmark` tries to provide a more modern management for bookmarks:

- The bookmarks are already generated in the first  $\text{\TeX}$  compile run.
- The font style and color of the bookmarks can be changed.
- More actions than simple `GoTo` actions are possible.

In the same way as `hyperref` [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  $\TeX$  engines `pdf $\TeX$` , `X $\TeX$` , and `V $\TeX$`  are automatically detected. The default for the DVI drivers is `dvips`. This can be changed in the configuration file `bookmark.cfg` by `\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 LuaTeX (independently from DVI or PDF modus) is running, then its `status.filename` is used automatically.

- Package `\currfile` [2] redefines L<sup>A</sup>T<sub>E</sub>X 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`, `gotor`, `level`, `named`, `openlevel`, `page`, `rawaction`, `uri`,  
`view`,

Additionally the following key is available:

`text`

It returns the text of the outline entry.

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

## 1.3 Compatibility with hyperref

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

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

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

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

The following commands are also available:

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

## 1.4 Adding bookmarks at the end

Package option `atend` enables the following macro:

```
\BookmarkAtEnd {⟨stuff⟩}
```

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

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

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

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

### Remarks.

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

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

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

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

## 2 Example

```
1 (*example)
2 \documentclass{article}
3 \usepackage{xcolor}[2007/01/21]
4 \usepackage{hyperref}
5 \usepackage[
6   open,
7   openlevel=2,
8   atend
9 ]{bookmark}[2019/12/03]
10
11 \bookmarksetup{color=blue}
12
13 \BookmarkAtEnd{%
14   \bookmarksetup{startatroot}%
15   \bookmark[named=LastPage, level=0]{End/Last page}%
16   \bookmark[named=FirstPage, level=1]{First page}%
17 }
18
19 \begin{document}
20 \section{First section}
21 \subsection{Subsection A}
22 \begin{figure}
23   \hypertarget{fig}{}%
24   A figure.
25 \end{figure}
26 \bookmark[
27   rellevel=1,
28   keeplevel,
29   dest=fig
30 ]{A figure}
31 \subsection{Subsection B}
32 \subsubsection{Subsubsection C}
33 \subsection{Umlauts: \ "A" "O" "U" "a" "o" "u" \ss}
34 \newpage
35 \bookmarksetup{
36   bold,
37   color=[rgb]{1,0,0}
38 }
39 \section{Very important section}
40 \bookmarksetup{
41   italic,
42   bold=false,
43   color=blue
44 }
45 \subsection{Italic section}
46 \bookmarksetup{
47   italic=false
48 }
49 \part{Misc}
50 \section{Diverse}
51 \subsubsection{Subsubsection, omitting subsection}
52 \bookmarksetup{
53   startatroot
54 }
55 \section{Last section outside part}
56 \subsection{Subsection}
```

```

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

```

## 3 Implementation

### 3.1 Package

```

97 <*package>
98 \NeedsTeXFormat{LaTeX2e}
99 \ProvidesPackage{bookmark}%
100 [2019/12/03 v1.28 PDF bookmarks (HO)]%

```

#### 3.1.1 Requirements

$\varepsilon$ -**T**<sub>E</sub>X.

\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 pdfTeX.

#### \BKM@EscapeName

```

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

```

#### \BKM@EscapeString

```

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

```

#### \BKM@EscapeHex

```

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

```

#### \BKM@UnescapeHex

```

137 \def\BKM@UnescapeHex#1{%
138   \EdefUnescapeHex#1#1%
139 }%

```

**Packages.** Don't load packages loaded by xpackagehyperref

```

140 \RequirePackage{hyperref}[2010/06/18]

```

### 3.1.2 Package options

```

141 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
142 \DeclareLocalOptions{%
143   atend,%
144   bold,%
145   color,%
146   depth,%

```

```

147 dest,%
148 draft,%
149 final,%
150 gotor,%
151 italic,%
152 keeplevel,%
153 level,%
154 named,%
155 numbered,%
156 open,%
157 openlevel,%
158 page,%
159 rawaction,%
160 rellevel,%
161 srcfile,%
162 srcline,%
163 startatroot,%
164 uri,%
165 view,%
166 }

\bookmarksetup
167 \newcommand*{\bookmarksetup}{\kvsetkeys{BKM}}

\BKM@setup
168 \def\BKM@setup#1{%
169   \bookmarksetup{#1}%
170   \ifx\BKM@HookNext\ltx@empty
171   \else
172     \expandafter\bookmarksetup\expandafter{\BKM@HookNext}%
173     \BKM@HookNextClear
174   \fi
175   \BKM@hook
176   \ifBKM@keeplevel
177   \else
178     \xdef\BKM@currentlevel{\BKM@level}%
179   \fi
180 }

\bookmarksetupnext
181 \newcommand*{\bookmarksetupnext}[1]{%
182   \ltx@GlobalAppendToMacro\BKM@HookNext{,#1}%
183 }

\BKM@setupnext

\BKM@HookNextClear
184 \def\BKM@HookNextClear{%
185   \global\let\BKM@HookNext\ltx@empty
186 }

\BKM@HookNext
187 \BKM@HookNextClear

188 \DeclareBoolOption{draft}
189 \DeclareComplementaryOption{final}{draft}

```

\BKM@DisableOptions

```
190 \def\BKM@DisableOptions{%
191   \DisableKeyvalOption[action=warning,package=bookmark]%
192     {BKM}{draft}%
193   \DisableKeyvalOption[action=warning,package=bookmark]%
194     {BKM}{final}%
195 }

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

\bookmark@open

```
197 \def\bookmark@open{%
198   \ifBKM@open\ltx@one\else\ltx@zero\fi
199 }

200 \DeclareStringOption[\maxdimen]{openlevel}
```

\BKM@openlevel

```
201 \edef\BKM@openlevel{\number\@bookmarksopenlevel}

202 %\DeclareStringOption[\c@tocdepth]{depth}
203 \ltx@ifundefined{Hy@bookmarksdepth}{%
204   \def\BKM@depth{\c@tocdepth}%
205 }{%
206   \let\BKM@depth\Hy@bookmarksdepth
207 }

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

\bookmark@depth

```
237 \def\bookmark@depth{\BKM@depth}
```

\BKM@SetDepthOrLevel

```
238 \def\BKM@SetDepthOrLevel#1#2{%
239   \begingroup
240     \setbox\z@=\hbox{%
241       \count@=#2\relax
242     \expandafter
243   }%
244 \expandafter\endgroup
245 \expandafter\def\expandafter#1\expandafter{\the\count@}%
246 }

247 \DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
248 \define@key{BKM}{level}{%
249   \edef\BKM@param{#1}%
250   \ifx\BKM@param\BKM@MacroCurrentLevel
251     \let\BKM@level\BKM@param
252   \else
253     \ltx@ifundefined{toclevel@\BKM@param}{%
254       \@onelevel@sanitize\BKM@param
255       \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
256       \ifcase 0\expandafter\ifx\BKM@temp-1\fi
257         \expandafter\ifnum\expandafter'\BKM@temp>47 %
258           \expandafter\ifnum\expandafter'\BKM@temp<58 %
259             1%
260           \fi
261         \fi
262       \relax
263       \PackageWarning{bookmark}{%
264         Unknown document division name (\BKM@param)\MessageBreak
265         for option 'level'%
266       }%
267     \else
268       \BKM@SetDepthOrLevel\BKM@level\BKM@param
269     \fi
270   }{%
271     \BKM@SetDepthOrLevel\BKM@level{%
272       \csname toclevel@\BKM@param\endcsname
273     }%
274   }%
275 \fi
276 }
```

\BKM@MacroCurrentLevel

```
277 \def\BKM@MacroCurrentLevel{\BKM@currentlevel}

278 \DeclareBoolOption{keeplevel}
279 \DeclareBoolOption{startatroot}
```

\BKM@startatrootfalse

```
280 \def\BKM@startatrootfalse{%
281   \global\let\ifBKM@startatroot\iffalse
282 }
```

\BKM@startatroottrue

```
283 \def\BKM@startatroottrue{%
284   \global\let\ifBKM@startatroot\iftrue
285 }
```

```

286 \define@key{BKM}{rellevel}{%
287   \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
288 }

```

`\bookmark@level`

```

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

```

`\BKM@currentlevel`

```

290 \def\BKM@currentlevel{0}

```

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

```

291 \DeclareBoolOption[%
292   \ifHy@bookmarksnumbered true\else false\fi
293 ]{numbered}
294 \g@addto@macro\BKM@numberedtrue{%
295   \let\ifHy@bookmarksnumbered\iftrue
296 }
297 \g@addto@macro\BKM@numberedfalse{%
298   \let\ifHy@bookmarksnumbered\iffalse
299 }
300 \g@addto@macro\Hy@bookmarksnumberedtrue{%
301   \let\ifBKM@numbered\iftrue
302 }
303 \g@addto@macro\Hy@bookmarksnumberedfalse{%
304   \let\ifBKM@numbered\iffalse
305 }

```

`\bookmark@numbered`

```

306 \def\bookmark@numbered{%
307   \ifBKM@numbered\ltx@one\else\ltx@zero\fi
308 }

```

### Redefinitions `hyperref's` options

`\BKM@PatchHyperrefOption`

```

309 \def\BKM@PatchHyperrefOption#1{%
310   \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
311 }

```

`\BKM@@PatchHyperrefOption`

```

312 \def\BKM@@PatchHyperrefOption#1{%
313   \expandafter\BKM@@@PatchHyperrefOption#1{##1}\BKM@nil#1%
314 }

```

`\BKM@@@PatchHyperrefOption`

```

315 \def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
316   \def#2##1{%
317     #1%
318     \bookmarksetup{#3={##1}}%
319   }%
320 }

```

```

321 \BKM@PatchHyperrefOption{bookmarksopen}{open}
322 \BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
323 \BKM@PatchHyperrefOption{bookmarksdepth}{depth}

```

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

```

324 \bitsetReset{BKM@FontStyle}%
325 \define@key{BKM}{italic}[true]{%
326   \expandafter\ifx\csname if#1\endcsname\iftrue
327     \bitsetSet{BKM@FontStyle}{0}%
328   \else
329     \bitsetClear{BKM@FontStyle}{0}%
330   \fi
331 }%
332 \define@key{BKM}{bold}[true]{%
333   \expandafter\ifx\csname if#1\endcsname\iftrue
334     \bitsetSet{BKM@FontStyle}{1}%
335   \else
336     \bitsetClear{BKM@FontStyle}{1}%
337   \fi
338 }%

\bookmark@italic
339 \def\bookmark@italic{%
340   \ifnum\bitsetGet{BKM@FontStyle}{0}=1 \ltx@one\else\ltx@zero\fi
341 }

\bookmark@bold
342 \def\bookmark@bold{%
343   \ifnum\bitsetGet{BKM@FontStyle}{1}=1 \ltx@one\else\ltx@zero\fi
344 }

\BKM@PrintStyle
345 \def\BKM@PrintStyle{%
346   \bitsetGetDec{BKM@FontStyle}%
347 }%

```

### Options for color.

```

348 \define@key{BKM}{color}{%
349   \HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}%
350 }

\BKM@color
351 \let\BKM@color\@empty

\bookmark@color
352 \def\bookmark@color{\BKM@color}

```

### 3.1.3 Action options

```

353 \def\BKM@temp#1{%
354   \DeclareStringOption{#1}%
355   \expandafter\edef\csname bookmark@#1\endcsname{%
356     \expandafter\noexpand\csname BKM@#1\endcsname
357   }%
358 }

\bookmark@dest
359 \BKM@temp{dest}

```

```

\bookmark@named
360 \BKM@temp{named}

\bookmark@uri
361 \BKM@temp{uri}

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

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

364 \define@key{BKM}{page}{%
365   \def\BKM@page{#1}%
366   \ifx\BKM@page\@empty
367   \else
368     \edef\BKM@page{\number\BKM@page}%
369     \ifnum\BKM@page>\z@
370     \else
371       \PackageError{bookmark}{Page must be positive}\@ehc
372       \def\BKM@page{1}%
373     \fi
374   \fi
375 }

\BKM@page
376 \let\BKM@page\@empty

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

378 \define@key{BKM}{view}{%
379   \BKM@CheckView{#1}%
380 }

\BKM@view
381 \let\BKM@view\@empty

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

BKM@CheckView
383 \def\BKM@CheckView#1{%
384   \BKM@CheckViewType#1 \@nil
385 }

\BKM@CheckViewType
386 \def\BKM@CheckViewType#1 #2\@nil{%
387   \def\BKM@type{#1}%
388   \@onelevel@sanitize\BKM@type
389   \BKM@TestViewType{Fit}{}%
390   \BKM@TestViewType{FitB}{}%
391   \BKM@TestViewType{FitH}{%
392     \BKM@CheckParam#2 \@nil{top}%
393   }%
394   \BKM@TestViewType{FitBH}{%
395     \BKM@CheckParam#2 \@nil{top}%

```

```

396 }%
397 \BKM@TestViewType{FitV}{%
398   \BKM@CheckParam#2 \@nil{bottom}%
399 }%
400 \BKM@TestViewType{FitBV}{%
401   \BKM@CheckParam#2 \@nil{bottom}%
402 }%
403 \BKM@TestViewType{FitR}{%
404   \BKM@CheckRect{#2}{ }%
405 }%
406 \BKM@TestViewType{XYZ}{%
407   \BKM@CheckXYZ{#2}{ }%
408 }%
409 \@car{%
410   \PackageError{bookmark}{%
411     Unknown view type '\BKM@type',\MessageBreak
412     using 'FitH' instead%
413   }\@ehc
414   \def\BKM@view{FitH}%
415 }%
416 \@nil
417 }

```

\BKM@TestViewType

```

418 \def\BKM@TestViewType#1{%
419   \def\BKM@temp{#1}%
420   \@onelevel@sanitize\BKM@temp
421   \ifx\BKM@type\BKM@temp
422     \let\BKM@view\BKM@temp
423     \expandafter\@car
424   \else
425     \expandafter\@gobble
426   \fi
427 }

```

BKM@CheckParam

```

428 \def\BKM@CheckParam#1 #2\@nil#3{%
429   \def\BKM@param{#1}%
430   \ifx\BKM@param\@empty
431     \PackageWarning{bookmark}{%
432       Missing parameter (#3) for '\BKM@type',\MessageBreak
433       using 0%
434     }%
435     \def\BKM@param{0}%
436   \else
437     \BKM@CalcParam
438   \fi
439   \edef\BKM@view{\BKM@view\space\BKM@param}%
440 }

```

BKM@CheckRect

```

441 \def\BKM@CheckRect#1#2{%
442   \BKM@@CheckRect#1#2#2#2\@nil
443 }

```

\BKM@@CheckRect

```

444 \def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
445   \def\BKM@temp{0}%

```

```

446 \def\BKM@param{#1}%
447 \ifx\BKM@param\@empty
448   \def\BKM@param{0}%
449   \def\BKM@temp{1}%
450 \else
451   \BKM@CalcParam
452 \fi
453 \edef\BKM@view{\BKM@view\space\BKM@param}%
454 \def\BKM@param{#2}%
455 \ifx\BKM@param\@empty
456   \def\BKM@param{0}%
457   \def\BKM@temp{1}%
458 \else
459   \BKM@CalcParam
460 \fi
461 \edef\BKM@view{\BKM@view\space\BKM@param}%
462 \def\BKM@param{#3}%
463 \ifx\BKM@param\@empty
464   \def\BKM@param{0}%
465   \def\BKM@temp{1}%
466 \else
467   \BKM@CalcParam
468 \fi
469 \edef\BKM@view{\BKM@view\space\BKM@param}%
470 \def\BKM@param{#4}%
471 \ifx\BKM@param\@empty
472   \def\BKM@param{0}%
473   \def\BKM@temp{1}%
474 \else
475   \BKM@CalcParam
476 \fi
477 \edef\BKM@view{\BKM@view\space\BKM@param}%
478 \ifnum\BKM@temp>\z@
479   \PackageWarning{bookmark}{Missing parameters for ‘\BKM@type’}%
480 \fi
481 }

```

\BKM@CheckXYZ

```

482 \def\BKM@CheckXYZ#1#2{%
483   \BKM@@CheckXYZ#1#2#2\@nil
484 }

```

\BKM@@CheckXYZ

```

485 \def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%
486   \def\BKM@param{#1}%
487   \let\BKM@temp\BKM@param
488   \@onelevel@sanitize\BKM@temp
489   \ifx\BKM@param\@empty
490     \let\BKM@param\BKM@null
491   \else
492     \ifx\BKM@temp\BKM@null
493     \else
494       \BKM@CalcParam
495     \fi
496   \fi
497   \edef\BKM@view{\BKM@view\space\BKM@param}%
498   \def\BKM@param{#2}%
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{#3}%
511 \ifx\BKM@param\@empty
512   \let\BKM@param\BKM@null
513 \fi
514 \edef\BKM@view{\BKM@view\space\BKM@param}%
515 }

\BKM@null
516 \def\BKM@null{null}
517 \@onelevel@sanitize\BKM@null

\BKM@CalcParam
518 \def\BKM@CalcParam{%
519   \begingroup
520   \let\calc\@firstofone
521   \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
522 }

\BKM@@CalcParam
523 \def\BKM@@CalcParam#1#2#3\@nil{%
524   \ifx\calc#1%
525     \@ifundefined{calc@assign@dimen}{%
526       \@ifundefined{dimexpr}{%
527         \setlength{\dimen@}{#2}%
528       }{%
529         \setlength{\dimen@}{\dimexpr#2\relax}%
530       }%
531     }{%
532       \setlength{\dimen@}{#2}%
533     }%
534     \dimen@.99626\dimen@
535     \edef\BKM@param{\strip@pt\dimen@}%
536     \expandafter\endgroup
537     \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
538   \else
539     \endgroup
540   \fi
541 }

```

### 3.1.4 Option atend

```

542 \DeclareBoolOption{atend}
543 \g@addto@macro\BKM@DisableOptions{%
544   \DisableKeyvalOption[action=warning,package=bookmark]%
545     {BKM}{atend}%
546 }

```

### 3.1.5 Option style

`\bookmarkdefinestyle`

```
547 \newcommand*\bookmarkdefinestyle}[2]{%
548   \ifundefined{BKM@style@#1}{%
549     }{%
550     \PackageInfo{bookmark}{Redefining style ‘#1’}%
551   }%
552   \@namedef{BKM@style@#1}{#2}%
553 }

554 \define@key{BKM}{style}{%
555   \BKM@StyleCall{#1}%
556 }
557 \newif\ifBKM@ok
```

`\BKM@StyleCall`

```
558 \def\BKM@StyleCall#1{%
559   \ifundefined{BKM@style@#1}{%
560     \PackageWarning{bookmark}{%
561       Ignoring unknown style ‘#1’%
562     }%
563   }{%
```

Check style stack.

```
564   \BKM@oktrue
565   \edef\BKM@StyleCurrent{#1}%
566   \@onelevel@sanitize\BKM@StyleCurrent
567   \let\BKM@StyleEntry\BKM@StyleEntryCheck
568   \BKM@StyleStack
569   \ifBKM@ok
570     \expandafter\@firstofone
571   \else
572     \PackageError{bookmark}{%
573       Ignoring recursive call of style ‘\BKM@StyleCurrent’%
574     }\@ehc
575     \expandafter\@gobble
576   \fi
577   {%
```

Push current style on stack.

```
578   \let\BKM@StyleEntry\relax
579   \edef\BKM@StyleStack{%
580     \BKM@StyleEntry{\BKM@StyleCurrent}%
581     \BKM@StyleStack
582   }%
```

Call style.

```
583   \expandafter\expandafter\expandafter\bookmarksetup
584   \expandafter\expandafter\expandafter{%
585     \csname BKM@style@\BKM@StyleCurrent\endcsname
586   }%
```

Pop current style from stack.

```
587   \BKM@StyleStackPop
588   }%
589 }%
590 }
```

\BKM@StyleStackPop

```
591 \def\BKM@StyleStackPop{%
592   \let\BKM@StyleEntry\relax
593   \edef\BKM@StyleStack{%
594     \expandafter\@gobbletwo\BKM@StyleStack
595   }%
596 }
```

\BKM@StyleEntryCheck

```
597 \def\BKM@StyleEntryCheck#1{%
598   \def\BKM@temp{#1}%
599   \ifx\BKM@temp\BKM@StyleCurrent
600     \BKM@okfalse
601   \fi
602 }
```

\BKM@StyleStack

```
603 \def\BKM@StyleStack{}
```

### 3.1.6 Options for source file location

```
604 \DeclareStringOption{srcline}
605 \DeclareStringOption{srcfile}
```

### 3.1.7 Hook support

\BKM@hook

```
606 \def\BKM@hook{}
607 \define@key{BKM}{addtohook}{%
608   \ltx@LocalAppendToMacro\BKM@hook{#1}%
609 }
```

bookmarkget

```
610 \newcommand*\bookmarkget}[1]{%
611   \romannumeral0%
612   \ltx@ifundefined{bookmark@#1}{%
613     \ltx@space
614   }{%
615     \expandafter\expandafter\expandafter\ltx@space
616     \csname bookmark@#1\endcsname
617   }%
618 }
```

### 3.1.8 Driver setup and loading

#### Driver detection.

\BKM@DefineDriverKey

```
619 \def\BKM@DefineDriverKey#1{%
620   \define@key{BKM}{#1}[]{%
621     \def\BKM@driver{#1}%
622   }%
623   \g@addto@macro\BKM@DisableOptions{%
624     \DisableKeyvalOption[action=warning,package=bookmark]%
625       {BKM}{#1}%
626   }%
627 }
```

```

628 \BKM@DefineDriverKey{pdftex}
629 \BKM@DefineDriverKey{dvips}
630 \BKM@DefineDriverKey{dvipsone}
631 \BKM@DefineDriverKey{textures}
632 \BKM@DefineDriverKey{dvipdfm}
633 \BKM@DefineDriverKey{dvipdfmx}
634 \BKM@DefineDriverKey{xetex}
635 \BKM@DefineDriverKey{vtex}
636 \define@key{BKM}{dvipdfmx-outline-open}[true]{%
637   \expandafter\ifx\csname if#1\expandafter\endcsname
638     \csname iftrue\endcsname
639     \chardef\SpecialDvipdfmxOutlineOpen\@ne
640   \else
641     \chardef\SpecialDvipdfmxOutlineOpen\z@
642   \fi
643 }
644 \g@addto@macro\BKM@DisableOptions{%
645   \DisableKeyvalOption{BKM}{dvipdfmx-outline-open}%
646 }

```

\bookmark@driver

```

647 \def\bookmark@driver{\BKM@driver}
648 \InputIfFileExists{bookmark.cfg}{-}{-}

```

\BookmarkDriverDefault

```

649 \providecommand*\BookmarkDriverDefault{dvips}

```

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

```

650 \ifpdf
651   \def\BKM@driver{pdftex}%
652   \ifx\pdfoutline\@undefined
653     \ifx\pdfextension\@undefined\else
654       \protected\def\pdfoutline{\pdfextension outline }
655     \fi
656   \fi
657 \else
658   \ifxetex
659     \def\BKM@driver{dvipdfm}%
660   \else
661     \ifvtex
662       \def\BKM@driver{vtex}%
663     \else
664       \edef\BKM@driver{\BookmarkDriverDefault}%
665     \fi
666   \fi
667 \fi

```

### Process options.

```

668 \ProcessKeyvalOptions*
669 \BKM@DisableOptions

```

### Option draft

```

670 \ifBKM@draft
671   \PackageWarningNoLine{bookmark}{Draft mode on}%
672   \let\bookmarksetup\ltx@gobble
673   \let\BookmarkAtEnd\ltx@gobble

```

```

674 \let\bookmarkdefinestyle\ltx@gobbletwo
675 \let\bookmarkget\ltx@gobble
676 \let\pdfbookmark\ltx@undefined
677 \newcommand*\pdfbookmark}[3][]{}%
678 \let\currentpdfbookmark\ltx@gobbletwo
679 \let\subpdfbookmark\ltx@gobbletwo
680 \let\belowpdfbookmark\ltx@gobbletwo
681 \newcommand*\bookmark}[2][]{}%
682 \renewcommand*\Hy@writebookmark}[5]{}%
683 \let\ReadBookmarks\relax
684 \let\BKM@DefGotoNameAction\ltx@gobbletwo % package 'hypdestopt'
685 \expandafter\endinput
686 \fi

```

### Driver validation and loading.

```

687 \newif\ifBKM@dvipdfmxOutlineOpen
688 \ltx@ifundefined{SpecialDvipdfmxOutlineOpen}{%
689   \ifxetex
690     \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
691     \else
692       \chardef\SpecialDvipdfmxOutlineOpen\ltx@one
693       \BKM@dvipdfmxOutlineOpentruer
694     \fi
695   \fi
696 }{%
697   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
698     \BKM@dvipdfmxOutlineOpentruer
699   \fi
700 }

701 \def\BKM@temp{dvipdfmx}%
702 \ifx\BKM@temp\BKM@driver
703   \def\BKM@driver{dvipdfm}%
704 \fi
705 \def\BKM@temp{pdftex}%
706 \ifpdf
707   \ifx\BKM@temp\BKM@driver
708   \else
709     \PackageWarningNoLine{bookmark}{%
710       Wrong driver '\BKM@driver', using 'pdftex' instead%
711     }%
712     \let\BKM@driver\BKM@temp
713   \fi
714 \else
715   \ifx\BKM@temp\BKM@driver
716     \PackageError{bookmark}{%
717       Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
718       Package loading is aborted%
719     }\@ehc
720     \expandafter\expandafter\expandafter\endinput
721   \fi
722 \def\BKM@temp{dvipdfm}%
723 \ifxetex
724   \ifx\BKM@temp\BKM@driver
725   \else
726     \PackageWarningNoLine{bookmark}{%
727       Wrong driver '\BKM@driver',\MessageBreak
728       using 'dvipdfm' for XeTeX instead%

```

```

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

```

### 3.1.9 Compatibility for hyperref

\pdfbookmark

```

761 \let\pdfbookmark\ltx@undefined
762 \newcommand*{\pdfbookmark}[3][0]{%
763     \bookmark[level=#1,dest={#3.#1}]{#2}%
764     \hyper@anchorstart{#3.#1}\hyper@anchorend
765 }

```

\currentpdfbookmark

```

766 \def\currentpdfbookmark{%
767     \pdfbookmark[\BKM@currentlevel]%
768 }

```

\subpdfbookmark

```

769 \def\subpdfbookmark{%
770     \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%
771     \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%
772 }

```

\belowpdfbookmark

```

773 \def\belowpdfbookmark#1#2{%
774     \xdef\BKM@gtemp{\number\BKM@currentlevel}%
775     \subpdfbookmark{#1}{#2}%
776     \global\let\BKM@currentlevel\BKM@gtemp

```

777 }

Section number, text, label, level, file

`\Hy@writebookmark`

```
778 \def\Hy@writebookmark#1#2#3#4#5{%
779   \ifnum#4>\BKM@depth\relax
780   \else
781     \def\BKM@type{#5}%
782     \ifx\BKM@type\Hy@bookmarkstype
783       \begingroup
784         \ifBKM@numbered
785           \let\numberline\Hy@numberline
786           \let\booknumberline\Hy@numberline
787           \let\partnumberline\Hy@numberline
788           \let\chapternumberline\Hy@numberline
789         \else
790           \let\numberline@gobble
791           \let\booknumberline@gobble
792           \let\partnumberline@gobble
793           \let\chapternumberline@gobble
794         \fi
795         \bookmark[level=#4,dest={#3}]{#2}%
796       \endgroup
797     \fi
798   \fi
799 }
```

`\ReadBookmarks`

```
800 \let\ReadBookmarks\relax
801 </package>
```

## 3.2 Driver for dvipdfm

```
802 (*dvipdfm)
803 \NeedsTeXFormat{LaTeX2e}
804 \ProvidesFile{bkm-dvipdfm.def}%
805 [2019/12/03 v1.28 bookmark driver for dvipdfm (HO)]%
```

`\BKM@id`

```
806 \newcount\BKM@id
807 \BKM@id=\z@
```

`\BKM@O`

```
808 \@namedef{BKM@O}{000}
```

`\ifBKM@sw`

```
809 \newif\ifBKM@sw
```

`\bookmark`

```
810 \newcommand*{\bookmark}[2] [] {%
811   \if@filesw
812     \begingroup
813       \def\bookmark@text{#2}%
814       \BKM@setup{#1}%
815       \edef\BKM@prev{\the\BKM@id}%
816       \global\advance\BKM@id\@ne
```

```

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

```

```

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

```

```

933         \fi
934         \BKM@action
935     >>%
936     }%
937 \endgroup
938 \fi
939 }

\BKM@getx
940 \def\BKM@getx#1#2#3{%
941 \def\BKM@x@parent{#1}%
942 \def\BKM@x@level{#2}%
943 \def\BKM@x@abslevel{#3}%
944 }

945 (/dvi)

3.3 Driver for VTeX

946 (*vtex)
947 \NeedsTeXFormat{LaTeX2e}
948 \ProvidesFile{bkm-vtex.def}%
949 [2019/12/03 v1.28 bookmark driver for VTeX (HO)]%

950 \ifvtexpdf
951 \else
952 \PackageWarningNoLine{bookmark}{%
953 The VTeX driver only supports PDF mode%
954 }%
955 \fi

\BKM@id
956 \newcount\BKM@id
957 \BKM@id=\z@

\BKM@O
958 \@namedef{BKM@O}{00}

\ifBKM@sw
959 \newif\ifBKM@sw

\bookmark
960 \newcommand*{\bookmark}[2][ ]{%
961 \if@filesw
962 \begingroup
963 \def\bookmark@text{#2}%
964 \BKM@setup{#1}%
965 \edef\BKM@prev{\the\BKM@id}%
966 \global\advance\BKM@id\@ne
967 \BKM@swtrue
968 \@whilesw\ifBKM@sw\fi{%
969 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
970 \BKM@startatrootfalse
971 \def\BKM@parent{0}%
972 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
973 O{BKM@level}%
974 }%
975 \BKM@swfalse
976 \else

```

```

977     \expandafter\expandafter\expandafter\BKM@getx
978         \csname BKM@\BKM@prev\endcsname
979     \ifnum\BKM@level>\BKM@x@level\relax
980         \let\BKM@parent\BKM@prev
981         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
982             {\BKM@prev}{\BKM@level}}%
983         }%
984         \BKM@swfalse
985     \else
986         \let\BKM@prev\BKM@x@parent
987     \fi
988 \fi
989 }%
990 \pdfstringdef\BKM@title{\bookmark@text}%
991 \BKM@vtx@title
992 \edef\BKM@FLAGS{\BKM@PrintStyle}%
993 \let\BKM@action\@empty
994 \ifx\BKM@goto\@empty
995     \ifx\BKM@dest\@empty
996         \ifx\BKM@named\@empty
997             \ifx\BKM@rawaction\@empty
998                 \ifx\BKM@uri\@empty
999                     \ifx\BKM@page\@empty
1000                         \PackageError{bookmark}{Missing action}\@ehc
1001                         \def\BKM@action{!}%
1002                     \else
1003                         \edef\BKM@action{!\BKM@page}%
1004                     \fi
1005                 \else
1006                     \BKM@EscapeString\BKM@uri
1007                     \edef\BKM@action{%
1008                         <u=%
1009                         /S/URI%
1010                         /URI(\BKM@uri)%
1011                         >%
1012                     }%
1013                 \fi
1014             \else
1015                 \edef\BKM@action{<u=\BKM@rawaction>}%
1016             \fi
1017         \else
1018             \BKM@EscapeName\BKM@named
1019             \edef\BKM@action{%
1020                 <u=%
1021                 /S/Named%
1022                 /N/\BKM@named
1023                 >%
1024             }%
1025         \fi
1026     \else
1027         \BKM@EscapeString\BKM@dest
1028         \edef\BKM@action{\BKM@dest}%
1029     \fi
1030 \else
1031     \ifx\BKM@dest\@empty
1032         \ifx\BKM@page\@empty
1033             \def\BKM@page{1}%
1034         \fi

```

```

1035     \ifx\BKM@view\@empty
1036     \def\BKM@view{Fit}%
1037     \fi
1038     \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
1039 \else
1040     \BKM@EscapeString\BKM@dest
1041     \edef\BKM@action{/D(\BKM@dest)}%
1042 \fi
1043 \BKM@EscapeString\BKM@gotor
1044 \edef\BKM@action{%
1045     <u=%
1046     /S/GoToR%
1047     /F(\BKM@gotor)%
1048     \BKM@action
1049     >>%
1050 }%
1051 \fi
1052 \ifx\BKM@color\@empty
1053     \let\BKM@RGBcolor\@empty
1054 \else
1055     \expandafter\BKM@toRGB\BKM@color\@nil
1056 \fi
1057 \special{%
1058     !outline \BKM@action;%
1059     p=\BKM@parent,%
1060     i=\number\BKM@id,%
1061     s=%
1062     \ifBKM@open
1063         \ifnum\BKM@level<\BKM@openlevel
1064             o%
1065         \else
1066             c%
1067         \fi
1068     \else
1069         c%
1070     \fi,%
1071 \ifx\BKM@RGBcolor\@empty
1072 \else
1073     c=\BKM@RGBcolor,%
1074 \fi
1075 \ifnum\BKM@FLAGS>\z@
1076     f=\BKM@FLAGS,%
1077 \fi
1078     t=\BKM@title
1079 }%
1080 \endgroup
1081 \fi
1082 }

```

\BKM@getx

```

1083 \def\BKM@getx#1#2{%
1084     \def\BKM@x@parent{#1}%
1085     \def\BKM@x@level{#2}%
1086 }

```

\BKM@toRGB

```

1087 \def\BKM@toRGB#1 #2 #3\@nil{%
1088     \let\BKM@RGBcolor\@empty

```

```

1089 \BKM@toRGBComponent{#1}%
1090 \BKM@toRGBComponent{#2}%
1091 \BKM@toRGBComponent{#3}%
1092 }

```

\BKM@toRGBComponent

```

1093 \def\BKM@toRGBComponent#1{%
1094   \dimen@=#1pt\relax
1095   \ifdim\dimen@>\z@
1096     \ifdim\dimen@<\p@
1097       \dimen@=255\dimen@
1098       \advance\dimen@ by 32768sp\relax
1099       \divide\dimen@ by 65536\relax
1100       \dimen@ii=\dimen@
1101       \divide\dimen@ii by 16\relax
1102       \edef\BKM@RGBcolor{%
1103         \BKM@RGBcolor
1104         \BKM@toHexDigit\dimen@ii
1105       }%
1106       \dimen@ii=16\dimen@ii
1107       \advance\dimen@-\dimen@ii
1108       \edef\BKM@RGBcolor{%
1109         \BKM@RGBcolor
1110         \BKM@toHexDigit\dimen@
1111       }%
1112     \else
1113       \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
1114     \fi
1115   \else
1116     \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
1117   \fi
1118 }

```

\BKM@toHexDigit

```

1119 \def\BKM@toHexDigit#1{%
1120   \ifcase\expandafter\@firstofone\expandafter{\number#1} %
1121     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
1122     8\or 9\or A\or B\or C\or D\or E\or F%
1123   \fi
1124 }

1125 \begingroup
1126 \catcode'\|=0 %
1127 \catcode'\|=12 %

```

\BKM@vtex@title

```

1128 |gdef|BKM@vtex@title{%
1129   |@onelevel@sanitize|BKM@title
1130   |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
1131   |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
1132   |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
1133   |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
1134   |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
1135   |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
1136 }%

```

\BKM@vtex@leftparen

```

1137 |gdef|BKM@vtex@leftparen#1\|#2|@nil{%

```

```

1138 #1%
1139 |ifx||#2||%
1140 |else
1141 (%)
1142 |ltx@ReturnAfterFi{%
1143 |BKM@vtex@leftparen#2|@nil
1144 }%
1145 |fi
1146 }%

```

\BKM@vtex@rightparen

```

1147 |gdef|BKM@vtex@rightparen#1\|#2|@nil{%
1148 #1%
1149 |ifx||#2||%
1150 |else
1151 )%
1152 |ltx@ReturnAfterFi{%
1153 |BKM@vtex@rightparen#2|@nil
1154 }%
1155 |fi
1156 }%

```

\BKM@vtex@zero

```

1157 |gdef|BKM@vtex@zero#1\0#2|@nil{%
1158 #1%
1159 |ifx||#2||%
1160 |else
1161 |noexpand|hv@pdf@char0%
1162 |ltx@ReturnAfterFi{%
1163 |BKM@vtex@zero#2|@nil
1164 }%
1165 |fi
1166 }%

```

\BKM@vtex@one

```

1167 |gdef|BKM@vtex@one#1\1#2|@nil{%
1168 #1%
1169 |ifx||#2||%
1170 |else
1171 |noexpand|hv@pdf@char1%
1172 |ltx@ReturnAfterFi{%
1173 |BKM@vtex@one#2|@nil
1174 }%
1175 |fi
1176 }%

```

\BKM@vtex@two

```

1177 |gdef|BKM@vtex@two#1\2#2|@nil{%
1178 #1%
1179 |ifx||#2||%
1180 |else
1181 |noexpand|hv@pdf@char2%
1182 |ltx@ReturnAfterFi{%
1183 |BKM@vtex@two#2|@nil
1184 }%
1185 |fi
1186 }%

```

\BKM@vtex@three

```
1187 |gdef|BKM@vtex@three#1\3#2|@nil{%
1188   #1%
1189   |ifx||#2||%
1190   |else
1191     |noexpand|hv@pdf@char3%
1192     |ltx@ReturnAfterFi{%
1193       |BKM@vtex@three#2|@nil
1194     }%
1195   |fi
1196 }%

1197 |endgroup
1198 </vtex>
```

### 3.4 Driver for pdfTeX

```
1199 (*pdfTeX)
1200 \NeedsTeXFormat{LaTeX2e}
1201 \ProvidesFile{bkm-pdfTeX.def}%
1202 [2019/12/03 v1.28 bookmark driver for pdfTeX (HO)]%
```

\BKM@DO@entry

```
1203 \def\BKM@DO@entry#1#2{%
1204   \begingroup
1205     \kvsetkeys{BKM@DO}{#1}%
1206     \def\BKM@DO@title{#2}%
1207     \ifx\BKM@DO@srcfile\@empty
1208     \else
1209       \BKM@UnescapeHex\BKM@DO@srcfile
1210     \fi
1211     \BKM@UnescapeHex\BKM@DO@title
1212     \expandafter\expandafter\expandafter\BKM@getx
1213     \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
1214     \let\BKM@attr\@empty
1215     \ifx\BKM@DO@flags\@empty
1216     \else
1217       \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1218     \fi
1219     \ifx\BKM@DO@color\@empty
1220     \else
1221       \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1222     \fi
1223     \ifx\BKM@attr\@empty
1224     \else
1225       \edef\BKM@attr{attr{\BKM@attr}}%
1226     \fi
1227     \let\BKM@action\@empty
1228     \ifx\BKM@DO@goto\@empty
1229     \ifx\BKM@DO@dest\@empty
1230     \ifx\BKM@DO@named\@empty
1231     \ifx\BKM@DO@rawaction\@empty
1232     \ifx\BKM@DO@uri\@empty
1233     \ifx\BKM@DO@page\@empty
1234       \PackageError{bookmark}{%
1235         Missing action\BKM@SourceLocation
1236       }\@ehc
1237       \edef\BKM@action{goto page1{/Fit}}%
```

```

1238         \else
1239             \ifx\BKM@DO@view\@empty
1240                 \def\BKM@DO@view{Fit}%
1241             \fi
1242             \edef\BKM@action{goto page\BKM@DO@page{\BKM@DO@view}}%
1243         \fi
1244     \else
1245         \BKM@UnescapeHex\BKM@DO@uri
1246         \BKM@EscapeString\BKM@DO@uri
1247         \edef\BKM@action{user{<</S/URI/URI(\BKM@DO@uri)>>}}%
1248     \fi
1249 \else
1250     \BKM@UnescapeHex\BKM@DO@rawaction
1251     \edef\BKM@action{%
1252         user{%
1253             <<%
1254                 \BKM@DO@rawaction
1255             >>%
1256         }%
1257     }%
1258 \fi
1259 \else
1260     \BKM@EscapeName\BKM@DO@named
1261     \edef\BKM@action{%
1262         user{<</S/Named/N/\BKM@DO@named>>}}%
1263     }%
1264 \fi
1265 \else
1266     \BKM@UnescapeHex\BKM@DO@dest
1267     \BKM@DefGotoNameAction\BKM@action\BKM@DO@dest
1268 \fi
1269 \else
1270     \ifx\BKM@DO@dest\@empty
1271         \ifx\BKM@DO@page\@empty
1272             \def\BKM@DO@page{0}%
1273         \else
1274             \BKM@CalcExpr\BKM@DO@page\BKM@DO@page-1%
1275         \fi
1276         \ifx\BKM@DO@view\@empty
1277             \def\BKM@DO@view{Fit}%
1278         \fi
1279         \edef\BKM@action{/D[\BKM@DO@page/\BKM@DO@view]}%
1280     \else
1281         \BKM@UnescapeHex\BKM@DO@dest
1282         \BKM@EscapeString\BKM@DO@dest
1283         \edef\BKM@action{/D(\BKM@DO@dest)}%
1284     \fi
1285     \BKM@UnescapeHex\BKM@DO@gotor
1286     \BKM@EscapeString\BKM@DO@gotor
1287     \edef\BKM@action{%
1288         user{%
1289             <<%
1290                 /S/GoToR%
1291                 /F(\BKM@DO@gotor)%
1292                 \BKM@action
1293             >>%
1294         }%
1295     }%

```

```

1296   \fi
1297   \pdfoutline\BKM@attr\BKM@action
1298           count\ifBKM@DO@open\else-\fi\BKM@x@childs
1299           {\BKM@DO@title}%
1300 \endgroup
1301 }

```

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

```

1302 \def\BKM@DefGotoNameAction#1#2{%
1303   \BKM@EscapeString\BKM@DO@dest
1304   \edef#1{goto name{#2}}%
1305 }

1306 </pdfTeX>
1307 (*pdfTeX | pdfmark)

```

`\BKM@SourceLocation`

```

1308 \def\BKM@SourceLocation{%
1309   \ifx\BKM@DO@srcfile\@empty
1310     \ifx\BKM@DO@srcline\@empty
1311       \else
1312         .\MessageBreak
1313         Source: line \BKM@DO@srcline
1314       \fi
1315     \else
1316       \ifx\BKM@DO@srcline\@empty
1317         .\MessageBreak
1318         Source: file '\BKM@DO@srcfile'%
1319       \else
1320         .\MessageBreak
1321         Source: file '\BKM@DO@srcfile', line \BKM@DO@srcline
1322       \fi
1323     \fi
1324 }

1325 </pdfTeX | pdfmark)

```

## 3.5 Drivers with pdfmark specials

### 3.5.1 Driver dvips

```

1326 (*dvips)
1327 \NeedsTeXFormat{LaTeX2e}
1328 \ProvidesFile{bkm-dvips.def}%
1329   [2019/12/03 v1.28 bookmark driver for dvips (HO)]%

```

`\BKM@PSHeaderFile`

```

1330 \def\BKM@PSHeaderFile#1{%
1331   \special{header=#1}%
1332 }

1333 </dvips>

```

### 3.5.2 Driver dvipsone

```

1334 (*dvipsone)
1335 \NeedsTeXFormat{LaTeX2e}
1336 \ProvidesFile{bkm-dvipsone.def}%
1337   [2019/12/03 v1.28 bookmark driver for dvipsone (HO)]%

```

\BKM@PSHeaderFile

```
1338 \def\BKM@PSHeaderFile#1{%
1339   \special{header=#1}%
1340 }

1341 (/dvipsone)
```

### 3.5.3 Driver textures

```
1342 (*textures)
1343 \NeedsTeXFormat{LaTeX2e}
1344 \ProvidesFile{bkm-textures.def}%
1345 [2019/12/03 v1.28 bookmark driver for textures (HO)]%
```

\BKM@PSHeaderFile

```
1346 \def\BKM@PSHeaderFile#1{%
1347   \special{prePostScriptfile #1}%
1348 }

1349 (/textures)
```

### 3.5.4 Common part

```
1350 (*pdfmark)
```

\BKM@filename

```
1351 \def\BKM@filename{\jobname.out.ps}

1352 \BKM@PSHeaderFile\BKM@filename

1353 \RequirePackage{atveryend}[2009/12/07]
1354 \AfterLastShipout{\BKM@pdfmark@out}
```

\BKM@pdfmark@out Do not use package rerunfilecheck here, because the file \BKM@filename is not read during the T<sub>E</sub>X run.

```
1355 \def\BKM@pdfmark@out{%
1356   \if@filesw
1357     \newwrite\BKM@file
1358     \immediate\openout\BKM@file=\BKM@filename\relax
1359     \BKM@write{\@percentchar!}%
1360     \BKM@write{/pdfmark where{pop}}%
1361     \BKM@write{%
1362       {%
1363         /globaldict where{pop globaldict}{userdict}ifelse%
1364         /pdfmark/cleartomark load put%
1365       }%
1366     }%
1367     \BKM@write{ifelse}%
1368   \else
1369     \let\BKM@write@gobble
1370     \let\BKM@DO@entry@gobbletwo
1371   \fi
1372 }
```

\BKM@write

```
1373 \def\BKM@write#1{%
1374   \immediate\write\BKM@file
1375 }
```

`\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`.

```

1376 \def\BKM@DO@entry#1#2{%
1377   \begingroup
1378     \kvsetkeys{BKM@DO}{#1}%
1379     \ifx\BKM@DO@srcfile\@empty
1380     \else
1381       \BKM@UnescapeHex\BKM@DO@srcfile
1382     \fi
1383     \def\BKM@DO@title{#2}%
1384     \BKM@UnescapeHex\BKM@DO@title
1385     \expandafter\expandafter\expandafter\BKM@getx
1386       \csname BKM@\BKM@DO@id@endcsname\@empty\@empty
1387     \let\BKM@attr\@empty
1388     \ifx\BKM@DO@flags\@empty
1389     \else
1390       \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
1391     \fi
1392     \ifx\BKM@DO@color\@empty
1393     \else
1394       \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
1395     \fi
1396     \let\BKM@action\@empty
1397     \ifx\BKM@DO@goto\@empty
1398     \ifx\BKM@DO@dest\@empty
1399     \ifx\BKM@DO@named\@empty
1400     \ifx\BKM@DO@rawaction\@empty
1401     \ifx\BKM@DO@uri\@empty
1402     \ifx\BKM@DO@page\@empty
1403       \PackageError{bookmark}{%
1404         Missing action\BKM@SourceLocation
1405       }{\@ehc
1406         \edef\BKM@action{%
1407           /Action/GoTo%
1408           /Page 1%
1409           /View[/Fit]%
1410         }%
1411       \else
1412         \ifx\BKM@DO@view\@empty
1413         \def\BKM@DO@view{Fit}%
1414         \fi
1415         \edef\BKM@action{%
1416           /Action/GoTo%
1417           /Page \BKM@DO@page
1418           /View[/\BKM@DO@view]%
1419         }%
1420       \fi
1421     \else
1422       \BKM@UnescapeHex\BKM@DO@uri
1423       \BKM@EscapeString\BKM@DO@uri
1424       \edef\BKM@action{%
1425         /Action<<%
1426         /Subtype/URI%
1427         /URI(\BKM@DO@uri)%
1428       >>%
1429     }%
1430   \fi

```

```

1431     \else
1432         \BKM@UnescapeHex\BKM@DO@rawaction
1433         \edef\BKM@action{%
1434             /Action<<%
1435             \BKM@DO@rawaction
1436             >>%
1437         }%
1438     \fi
1439 \else
1440     \BKM@EscapeName\BKM@DO@named
1441     \edef\BKM@action{%
1442         /Action<<%
1443         /Subtype/Named%
1444         /N/\BKM@DO@named
1445     >>%
1446 }%
1447 \fi
1448 \else
1449     \BKM@UnescapeHex\BKM@DO@dest
1450     \BKM@EscapeString\BKM@DO@dest
1451     \edef\BKM@action{%
1452         /Action/GoTo%
1453         /Dest(\BKM@DO@dest)cvn%
1454     }%
1455 \fi
1456 \else
1457     \ifx\BKM@DO@dest\@empty
1458     \ifx\BKM@DO@page\@empty
1459     \def\BKM@DO@page{1}%
1460     \fi
1461     \ifx\BKM@DO@view\@empty
1462     \def\BKM@DO@view{Fit}%
1463     \fi
1464     \edef\BKM@action{%
1465         /Page \BKM@DO@page
1466         /View[/\BKM@DO@view]%
1467     }%
1468 \else
1469     \BKM@UnescapeHex\BKM@DO@dest
1470     \BKM@EscapeString\BKM@DO@dest
1471     \edef\BKM@action{%
1472         /Dest(\BKM@DO@dest)cvn%
1473     }%
1474 \fi
1475 \BKM@UnescapeHex\BKM@DO@gotor
1476 \BKM@EscapeString\BKM@DO@gotor
1477 \edef\BKM@action{%
1478     /Action/GoToR%
1479     /File(\BKM@DO@gotor)%
1480     \BKM@action
1481 }%
1482 \fi
1483 \BKM@write{[]}%
1484 \BKM@write{/Title(\BKM@DO@title)}%
1485 \ifnum\BKM@x@childs>\z@
1486     \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@childs}%
1487 \fi
1488 \ifx\BKM@attr\@empty

```

```

1489   \else
1490     \BKM@write{\BKM@attr}%
1491   \fi
1492   \BKM@write{\BKM@action}%
1493   \BKM@write{/OUT pdfmark}%
1494 \endgroup
1495 }

1496 (/pdfmark)

```

### 3.6 Common part for pdftex and pdfmark

```
1497 (*pdftex | pdfmark)
```

#### 3.6.1 Write auxiliary file

```

1498 \RequirePackage{auxhook}

1499 \AddLineBeginMainAux{%
1500   \string\providecommand\string\BKM@entry[2]{}%
1501 }

\BKM@id
1502 \newcount\BKM@id
1503 \BKM@id=\z@

\BKM@O
1504 \@namedef{BKM@O}{OOO}

\ifBKM@sw
1505 \newif\ifBKM@sw

\bookmark
1506 \newcommand*{\bookmark}[2][ ]{%
1507   \if@filesw
1508     \begingroup
1509     \BKM@InitSourceLocation
1510     \def\bookmark@text{#2}%
1511     \BKM@setup{#1}%
1512     \ifx\BKM@srcfile\@empty
1513     \else
1514       \BKM@EscapeHex\BKM@srcfile
1515     \fi
1516     \edef\BKM@prev{\the\BKM@id}%
1517     \global\advance\BKM@id\@ne
1518     \BKM@swtrue
1519     \@whilsw\ifBKM@sw\fi{%
1520       \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1521         \BKM@startatrootfalse
1522         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1523           O{\BKM@level}0%
1524         }%
1525         \BKM@swfalse
1526       \else
1527         \expandafter\expandafter\expandafter\BKM@getx
1528         \csname BKM@\BKM@prev\endcsname
1529         \ifnum\BKM@level>\BKM@x@level\relax
1530         \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1531           {\BKM@prev}{\BKM@level}0%
1532         }%

```

```

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

```

\BKM@getx

```

1579 \def\BKM@getx#1#2#3{%
1580     \def\BKM@x@parent{#1}%
1581     \def\BKM@x@level{#2}%
1582     \def\BKM@x@childs{#3}%
1583 }

```

\BKM@auxentry

```

1584 \def\BKM@auxentry#1{%
1585     \expandafter\ifx\csname BKM@#1\endcsname\@empty
1586     \else

```

```

1587     ,#1={\csname BKM@#1\endcsname}%
1588 \fi
1589 }

```

`\BKM@InitSourceLocation`

```

1590 \def\BKM@InitSourceLocation{%
1591   \edef\BKM@srcline{\the\inputlineno}%
1592   \BKM@LuaTeX@InitFile
1593   \ifx\BKM@srcfile\@empty
1594     \ltx@ifundefined{currfilepath}{}{%
1595       \edef\BKM@srcfile{\currfilepath}%
1596     }%
1597 \fi
1598 }

```

`\BKM@LuaTeX@InitFile`

```

1599 \ifluatex
1600   \ifnum\luatexversion>36 %
1601     \def\BKM@LuaTeX@InitFile{%
1602       \begingroup
1603         \ltx@LocToksA={}%
1604         \edef\x{\endgroup
1605           \def\noexpand\BKM@srcfile{%
1606             \the\expandafter\ltx@LocToksA
1607             \directlua{%
1608               if status and status.filename then %
1609                 tex.settoks('ltx@LocToksA', status.filename)%
1610             }end%
1611           }%
1612         }%
1613       }\x
1614     }%
1615   \else
1616     \let\BKM@LuaTeX@InitFile\relax
1617 \fi
1618 \else
1619   \let\BKM@LuaTeX@InitFile\relax
1620 \fi

```

### 3.6.2 Read auxiliary data

```

1621 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1622 \DeclareStringOption[0]{id}
1623 \DeclareBoolOption{open}
1624 \DeclareStringOption{flags}
1625 \DeclareStringOption{color}
1626 \DeclareStringOption{dest}
1627 \DeclareStringOption{named}
1628 \DeclareStringOption{uri}
1629 \DeclareStringOption{gotor}
1630 \DeclareStringOption{page}
1631 \DeclareStringOption{view}
1632 \DeclareStringOption{rawaction}
1633 \DeclareStringOption{srcline}
1634 \DeclareStringOption{srcfile}
1635 \AtBeginDocument{%
1636   \let\BKM@entry\BKM@DO@entry
1637 }

```

```
1638 </pdftex | pdfmark>
```

### 3.7 Option `atend`

#### 3.7.1 Hook

```
1639 (*package)
1640 \ifBKM@atend
1641 \else
```

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

```
1642 \newcommand{\BookmarkAtEnd}[1]{%
1643   \PackageWarning{bookmark}{%
1644     Ignored, because option ‘atend’ is missing%
1645   }%
1646 }
```

```
1647 \expandafter\endinput
1648 \fi
```

`\BookmarkAtEnd`

```
1649 \newcommand*{\BookmarkAtEnd}{%
1650   \g@addto@macro\BKM@EndHook
1651 }
1652 \let\BKM@EndHook\@empty
1653 </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.

```
1654 (*pdftex | pdfmark)
1655 \ifBKM@atend
1656   \AfterLastShipout{%
1657     \BKM@EndHook
1658   }%
1659 \fi
1660 </pdftex | pdfmark>
```

#### 3.7.3 Drivers using `\AtEndDvi`

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

```
1661 (*dvipdfm | vtex)
1662 \ifBKM@atend
1663   \RequirePackage{atenddvi}%
```

```
1664 \AtEndDvi{\BKM@EndHook}%
1665 \fi
1666 </dviptfm | vtex>
```

## 4 Installation

### 4.1 Download

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

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

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

**Bundle.** All the packages of the bundle ‘bookmark’ 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/bookmark.tds.zip](#)

*TDS* refers to the standard “A Directory Structure for T<sub>E</sub>X Files” ([CTAN:pkg/tds](#)). Directories with `texmf` in their name are usually organized this way.

### 4.2 Bundle installation

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

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

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

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

---

<sup>1</sup>[CTAN:pkg/bookmark](#)

## 4.4 Refresh file name databases

If your  $\text{T}_{\text{E}}\text{X}$  distribution ( $\text{T}_{\text{E}}\text{X}$  Live,  $\text{mikT}_{\text{E}}\text{X}$ , ...) relies on file name databases, you must refresh these. For example,  $\text{T}_{\text{E}}\text{X}$  Live 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  $\text{pdfL}^{\text{A}}\text{T}_{\text{E}}\text{X}$ :

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

## 5 References

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

## 6 History

[2007/02/19 v0.1]

- First experimental version.

[2007/02/20 v0.2]

- Option `startatroot` added.
- Dummies for `\pdf(un)escape...` commands added to get the package basically work for non- $\text{pdfT}_{\text{E}}\text{X}$  users.

[2007/02/21 v0.3]

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

[2007/02/22 v0.4]

- `hyperref`'s `bookmarkstype` respected.

[2007/03/02 v0.5]

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

[2007/03/03 v0.6]

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

[2007/03/07 v0.7]

- Dependency from  $\epsilon$ -`TeX` removed.

[2007/04/09 v0.8]

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

[2007/04/25 v0.9]

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

[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  $\epsilon$ -`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 Xe<sub>La</sub>TeX.

[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)

[2019/12/03 v1.28]

- Documentation updates.
- adjust package loading (all required packages already loaded by hyperref).

## 7 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             |   | \l                         |   |
|---------------------|---|----------------------------|---|
| \"                  | 33  | \l                         | 1126  |
| \(                  | 1130, 1137  | Numbers                    |   |
| \)                  | 1131, 1147  | \0                         | 1132, 1157  |
| \@bookmarkopenlevel | 201   | \1                         | 1133, 1167  |
| \@car               | 215, 255, 409, 423  | \2                         | 1134, 1177  |
| \@ehc               | 371, 413, 574,<br>719, 748, 758, 850, 1000, 1236, 1405  | \3                         | 1135, 1187  |
| \@empty             | 120, 126,<br>132, 210, 351, 366, 376, 381,<br>430, 447, 455, 463, 471, 489,<br>501, 511, 521, 843, 844, 845,<br>846, 847, 848, 849, 853, 886,<br>887, 892, 927, 993, 994, 995,<br>996, 997, 998, 999, 1031, 1032,<br>1035, 1052, 1053, 1071, 1088,<br>1207, 1213, 1214, 1215, 1219,<br>1223, 1227, 1228, 1229, 1230,<br>1231, 1232, 1233, 1239, 1270,<br>1271, 1276, 1309, 1310, 1316,<br>1379, 1386, 1387, 1388, 1392,<br>1396, 1397, 1398, 1399, 1400,<br>1401, 1402, 1412, 1457, 1458,<br>1461, 1488, 1512, 1585, 1593, 1652 | A                          |   |
| \@firstofone        | 520, 570, 1120  | \AddLineBeginMainAux       | 1499  |
| \@gobble            | 425, 575, 790, 791, 792, 793, 1369  | \advance                   | 106, 816, 966, 1098, 1107, 1517   |
| \@gobbletwo         | 594, 1370   | \AfterLastShipout          | 1354, 1656  |
| \@ifundefined       | 525, 526, 548, 559  | \AtBeginDocument           | 1635  |
| \@mainaux           | 1553  | \AtEndDvi                  | 1664  |
| \@namedef           | 552, 808, 958, 1504   | B                          |   |
| \@ne                | 639, 816, 966, 1517   | \begin                     | 19, 22  |
| \@nil               | 215, 255, 384, 386, 392,<br>395, 398, 401, 416, 428, 442,<br>444, 483, 485, 521, 523, 1055, 1087  | \belowpdfbookmark          | 680, <u>773</u>   |
| \@onelevel@sanitize | 214,<br>254, 388, 420, 488, 500, 517, 566   | \bitsetClear               | 329, 336  |
| \@percentchar       | 1359  | \bitsetGet                 | 340, 343  |
| \@undefined         | 652, 653  | \bitsetGetDec              | 346   |
| \@whitespace        | 818, 968, 1519  | \bitsetReset               | 324   |
| \\                  | 1127  | \bitsetSet                 | 327, 334  |
|                     |   | \BKM@                      | 808, <u>958</u> , <u>1504</u>   |
|                     |   | \BKM@@@PatchHyperrefOption | 313, <u>315</u>   |
|                     |   | \BKM@@CalcParam            | 521, <u>523</u>   |
|                     |   | \BKM@@CheckRect            | 442, <u>444</u>   |
|                     |   | \BKM@@CheckXYZ             | 483, <u>485</u>   |
|                     |   | \BKM@@page                 | 377   |
|                     |   | \BKM@@PatchHyperrefOption  | 310, <u>312</u>   |
|                     |   | \BKM@abslevel              | 819, 823, 830, 832, 924   |
|                     |   | \BKM@action                | 843, 851, 856, 860, 868, 872,<br>878, 895, 898, 901, 905, 934,<br>993, 1001, 1003, 1007, 1015,<br>1019, 1028, 1038, 1041, 1044,<br>1048, 1058, 1227, 1237, 1242,<br>1247, 1251, 1261, 1267, 1279,<br>1283, 1287, 1292, 1297, 1396,<br>1406, 1415, 1424, 1433, 1441,<br>1451, 1464, 1471, 1477, 1480, 1492 |

\BKM@attr . . . . . 1214, 1217, 1221, 1223, 1225,  
1297, 1387, 1390, 1394, 1488, 1490  
\BKM@auxentry . . . . . 1561, 1562, 1563, 1564, 1565,  
1566, 1567, 1568, 1572, 1573, 1584  
\BKM@CalcExpr . . . . . 101, 287, 770, 830, 890, 1274, 1534  
\BKM@CalcParam . . . . . 437,  
451, 459, 467, 475, 494, 506, 518  
\BKM@CalcResult . . . . . 770, 771, 1534, 1536  
\BKM@CheckParam . . . . . 392, 395, 398, 401, 428, 428  
\BKM@CheckRect . . . . . 404, 441, 441  
\BKM@CheckView . . . . . 379, 383, 383  
\BKM@CheckViewType . . . . . 384, 386  
\BKM@CheckXYZ . . . . . 407, 482  
\BKM@color . . . . . 349, 351, 352, 927, 929, 1052, 1055  
\BKM@currentlevel . . . . . 178, 247,  
277, 287, 290, 767, 770, 774, 776  
\BKM@DefGotoNameAction 684, 1267, 1302  
\BKM@DefineDriverKey . . . . . 619, 628,  
629, 630, 631, 632, 633, 634, 635  
\BKM@depth . . . . . 204, 206, 211, 228, 231, 237, 779  
\BKM@dest . . . . . 845,  
877, 881, 886, 897, 898, 995,  
1027, 1028, 1031, 1040, 1041, 1548  
\BKM@DisableOptions . . . . . 190, 543, 623, 644, 669  
\BKM@DO@color . . . . . 1219, 1221, 1392, 1394  
\BKM@DO@dest . . . . . 1229, 1266, 1267, 1270, 1281,  
1282, 1283, 1303, 1398, 1449,  
1450, 1453, 1457, 1469, 1470, 1472  
\BKM@DO@entry . . . . . 1203, 1370, 1376, 1636  
\BKM@DO@flags . . . . . 1215, 1217, 1388, 1390  
\BKM@DO@gotor . . . . . 1228, 1285,  
1286, 1291, 1397, 1475, 1476, 1479  
\BKM@DO@id . . . . . 1213, 1386  
\BKM@DO@named . . . . . 1230, 1260, 1262, 1399, 1440, 1444  
\BKM@DO@page . . . . . 1233, 1242, 1271, 1272, 1274,  
1279, 1402, 1417, 1458, 1459, 1465  
\BKM@DO@rawaction . . . . . 1231, 1250, 1254, 1400, 1432, 1435  
\BKM@DO@srcfile . . . . . 1207,  
1209, 1309, 1318, 1321, 1379, 1381  
\BKM@DO@srcline 1310, 1313, 1316, 1321  
\BKM@DO@title . . . . . 1206, 1211, 1299, 1383, 1384, 1484  
\BKM@DO@uri . . . . . 1232, 1245,  
1246, 1247, 1401, 1422, 1423, 1427  
\BKM@DO@view . . . . . 1239,  
1240, 1242, 1276, 1277, 1279,  
1412, 1413, 1418, 1461, 1462, 1466  
\BKM@driver 621, 647, 650, 702, 703,  
707, 710, 712, 715, 724, 727,  
730, 735, 738, 741, 744, 754, 756  
\BKM@DvipdfmxOutlineOpentru 693, 698  
\BKM@EndHook . . . . . 1650, 1652, 1657, 1664  
\BKM@entry . . . . . 1500, 1554, 1636  
\BKM@EscapeHex . . . . . 131,  
1514, 1548, 1549, 1550, 1551, 1552  
\BKM@EscapeName . . . . . 119, 871, 1018, 1260, 1440  
\BKM@EscapeString . . . . . 125, 859, 877, 897, 900, 1006,  
1027, 1040, 1043, 1246, 1282,  
1286, 1303, 1423, 1450, 1470, 1476  
\BKM@file . . . . . 1357, 1358, 1374  
\BKM@filename . . . . . 1351, 1352, 1358  
\BKM@FLAGS . . . . . 842, 931, 932,  
992, 1075, 1076, 1546, 1569, 1570  
\BKM@getx . . . . . 827, 940,  
977, 1083, 1212, 1385, 1527, 1579  
\BKM@gotor . . . . . 844, 900, 904, 994, 1043, 1047, 1550  
\BKM@gtemp . . . . . 774, 776  
\BKM@hook . . . . . 175, 606, 608  
\BKM@HookNext . . . . . 170, 172, 182, 185, 187  
\BKM@HookNextClear . . . . . 173, 184, 187  
\BKM@id . . . . . 806, 815, 816, 822, 831,  
956, 965, 966, 972, 981, 1060,  
1502, 1516, 1517, 1522, 1530, 1555  
\BKM@InitSourceLocation . . . . . 1509, 1590  
\BKM@level . . . . . 178, 251, 268, 271, 287, 289,  
823, 829, 832, 913, 973, 979,  
982, 1063, 1523, 1529, 1531, 1557  
\BKM@LuaTeX@InitFile . . . . . 1592, 1599  
\BKM@MacroCurrentLevel . . . . . 250, 277  
\BKM@named 846, 871, 873, 996, 1018, 1022  
\BKM@nil . . . . . 313, 315  
\BKM@null . . . . . 490, 492, 502, 504, 512, 516  
\BKM@numberedfalse . . . . . 297  
\BKM@numberedtrue . . . . . 294  
\BKM@okfalse . . . . . 600  
\BKM@oktrue . . . . . 564  
\BKM@openlevel . . . . . 201, 915, 1063, 1557  
\BKM@page . . . . . 365, 366, 368, 369, 372,  
376, 849, 856, 887, 888, 890,  
895, 999, 1003, 1032, 1033, 1038  
\BKM@param 209, 210, 213, 214, 215,  
224, 228, 232, 249, 250, 251,  
253, 254, 255, 264, 268, 272,  
429, 430, 435, 439, 446, 447,  
448, 453, 454, 455, 456, 461,  
462, 463, 464, 469, 470, 471,  
472, 477, 486, 487, 489, 490,  
497, 498, 499, 501, 502, 509,  
510, 511, 512, 514, 521, 535, 537  
\BKM@parent . . . . . 971, 980, 1059

|  |  |
|--|--|
| <code>\BKM@PatchHyperrefOption</code> .....  | <code>\BKM@view</code> .....   |
| ..... <a href="#">309</a> , <a href="#">321</a> , <a href="#">322</a> , <a href="#">323</a>  | <a href="#">381</a> , <a href="#">382</a> ,  |
| <code>\BKM@pdfmark@out</code> .....  | <a href="#">414</a> , <a href="#">422</a> , <a href="#">439</a> , <a href="#">453</a> , <a href="#">461</a> , <a href="#">469</a> ,  |
| <a href="#">1354</a> , <a href="#">1355</a>  | <a href="#">477</a> , <a href="#">497</a> , <a href="#">509</a> , <a href="#">514</a> , <a href="#">853</a> , <a href="#">854</a> ,  |
| <code>\BKM@prev</code> <a href="#">815</a> , <a href="#">820</a> , <a href="#">828</a> , <a href="#">832</a> , <a href="#">836</a> , <a href="#">965</a> , | <a href="#">856</a> , <a href="#">892</a> , <a href="#">893</a> , <a href="#">895</a> , <a href="#">1035</a> , <a href="#">1036</a> , <a href="#">1038</a>                                   |
| <a href="#">969</a> , <a href="#">978</a> , <a href="#">980</a> , <a href="#">982</a> , <a href="#">986</a> , <a href="#">1516</a> ,                       | <code>\BKM@vtex@leftparen</code> .....   |
| <a href="#">1520</a> , <a href="#">1528</a> , <a href="#">1531</a> , <a href="#">1533</a> , <a href="#">1535</a> , <a href="#">1541</a>                    | <a href="#">1137</a>   |
| <code>\BKM@PrintStyle</code> ..  | <code>\BKM@vtex@one</code> .....   |
| <a href="#">345</a> , <a href="#">842</a> , <a href="#">992</a> , <a href="#">1546</a>   | <a href="#">1167</a>   |
| <code>\BKM@PSHeaderFile</code> .....   | <code>\BKM@vtex@rightparen</code> .....  |
| ..... <a href="#">1330</a> , <a href="#">1338</a> , <a href="#">1346</a> , <a href="#">1352</a>  | <a href="#">1147</a>   |
| <code>\BKM@rawaction</code> <a href="#">847</a> , <a href="#">868</a> , <a href="#">997</a> , <a href="#">1015</a> , <a href="#">1551</a>                  | <code>\BKM@vtex@three</code> .....   |
| <code>\BKM@RGBcolor</code> <a href="#">1053</a> , <a href="#">1071</a> , <a href="#">1073</a> , <a href="#">1088</a> ,                                     | <a href="#">1187</a>   |
| <a href="#">1102</a> , <a href="#">1103</a> , <a href="#">1108</a> , <a href="#">1109</a> , <a href="#">1113</a> , <a href="#">1116</a>                    | <code>\BKM@vtex@title</code> .....   |
| <code>\BKM@SetDepthOrLevel</code> .....  | <a href="#">991</a> , <a href="#">1128</a>   |
| ..... <a href="#">228</a> , <a href="#">231</a> , <a href="#">238</a> , <a href="#">268</a> , <a href="#">271</a>  | <code>\BKM@vtex@two</code> .....   |
| <code>\BKM@setup</code> .....  | <a href="#">1177</a>   |
| <a href="#">168</a> , <a href="#">814</a> , <a href="#">964</a> , <a href="#">1511</a>   | <code>\BKM@vtex@zero</code> .....  |
| <code>\BKM@setupnext</code> .....  | <a href="#">1157</a>   |
| <a href="#">184</a>  | <code>\BKM@write</code> .....  |
| <code>\BKM@SourceLocation</code> .   | <a href="#">1360</a> , <a href="#">1361</a> , <a href="#">1367</a> , <a href="#">1369</a> , <a href="#">1373</a> ,   |
| <a href="#">1235</a> , <a href="#">1308</a> , <a href="#">1404</a>   | <a href="#">1483</a> , <a href="#">1484</a> , <a href="#">1486</a> , <a href="#">1490</a> , <a href="#">1492</a> , <a href="#">1493</a>  |
| <code>\BKM@srcfile</code> .....  | <code>\BKM@x@abslevel</code> .....   |
| ..... <a href="#">1512</a> , <a href="#">1514</a> , <a href="#">1593</a> , <a href="#">1595</a> , <a href="#">1605</a>                                     | <a href="#">830</a> , <a href="#">943</a>  |
| <code>\BKM@srcline</code> .....  | <code>\BKM@x@chilids</code> .....  |
| <a href="#">1591</a>   | ..... <a href="#">1298</a> , <a href="#">1485</a> , <a href="#">1486</a> , <a href="#">1534</a> , <a href="#">1582</a>   |
| <code>\BKM@startatrootfalse</code> .....   | <code>\BKM@x@level</code> .....  |
| ..... <a href="#">280</a> , <a href="#">821</a> , <a href="#">970</a> , <a href="#">1521</a>   | <a href="#">829</a> ,  |
| <code>\BKM@startatroottrue</code> .....  | <a href="#">942</a> , <a href="#">979</a> , <a href="#">1085</a> , <a href="#">1529</a> , <a href="#">1536</a> , <a href="#">1581</a>  |
| <a href="#">283</a>  | <code>\BKM@x@parent</code> .....   |
| <code>\BKM@StyleCall</code> .....  | <a href="#">836</a> ,  |
| <a href="#">555</a> , <a href="#">558</a>  | <a href="#">941</a> , <a href="#">986</a> , <a href="#">1084</a> , <a href="#">1536</a> , <a href="#">1541</a> , <a href="#">1580</a>  |
| <code>\BKM@StyleCurrent</code> .....   | <code>\bookmark</code> ...   |
| ..... <a href="#">565</a> , <a href="#">566</a> , <a href="#">573</a> , <a href="#">580</a> , <a href="#">585</a> , <a href="#">599</a>                    | <a href="#">15</a> , <a href="#">16</a> , <a href="#">26</a> , <a href="#">62</a> , <a href="#">63</a> , <a href="#">64</a> ,  |
| <code>\BKM@StyleEntry</code> ...   | <a href="#">65</a> , <a href="#">67</a> , <a href="#">71</a> , <a href="#">75</a> , <a href="#">79</a> , <a href="#">85</a> , <a href="#">86</a> , <a href="#">87</a> , <a href="#">88</a> , |
| <a href="#">567</a> , <a href="#">578</a> , <a href="#">580</a> , <a href="#">592</a>  | <a href="#">89</a> , <a href="#">94</a> , <a href="#">681</a> , <a href="#">763</a> , <a href="#">795</a> , <a href="#">810</a> , <a href="#">960</a> , <a href="#">1506</a>                 |
| <code>\BKM@StyleEntryCheck</code> .....  | <code>\bookmark@bold</code> .....  |
| <a href="#">567</a> , <a href="#">597</a>  | <a href="#">342</a>  |
| <code>\BKM@StyleStack</code> .....   | <code>\bookmark@color</code> .....   |
| ..... <a href="#">568</a> , <a href="#">579</a> , <a href="#">581</a> , <a href="#">593</a> , <a href="#">594</a> , <a href="#">603</a>                    | <a href="#">352</a>  |
| <code>\BKM@StyleStackPop</code> .....  | <code>\bookmark@depth</code> .....   |
| <a href="#">587</a> , <a href="#">591</a>  | <a href="#">237</a>  |
| <code>\BKM@swfalse</code> .....  | <code>\bookmark@dest</code> .....  |
| ... <a href="#">825</a> , <a href="#">834</a> , <a href="#">975</a> , <a href="#">984</a> , <a href="#">1525</a> , <a href="#">1539</a>                    | <a href="#">359</a>  |
| <code>\BKM@swtrue</code> .....   | <code>\bookmark@driver</code> .....  |
| <a href="#">817</a> , <a href="#">967</a> , <a href="#">1518</a>   | <a href="#">647</a>  |
| <code>\BKM@temp</code> .....   | <code>\bookmark@gotor</code> .....   |
| <a href="#">215</a> , <a href="#">216</a> ,  | <a href="#">362</a>  |
| <a href="#">217</a> , <a href="#">218</a> , <a href="#">255</a> , <a href="#">256</a> , <a href="#">257</a> , <a href="#">258</a> ,                        | <code>\bookmark@italic</code> .....  |
| <a href="#">353</a> , <a href="#">359</a> , <a href="#">360</a> , <a href="#">361</a> , <a href="#">362</a> , <a href="#">363</a> ,                        | <a href="#">339</a>  |
| <a href="#">419</a> , <a href="#">420</a> , <a href="#">421</a> , <a href="#">422</a> , <a href="#">445</a> , <a href="#">449</a> ,                        | <code>\bookmark@level</code> .....   |
| <a href="#">457</a> , <a href="#">465</a> , <a href="#">473</a> , <a href="#">478</a> , <a href="#">487</a> , <a href="#">488</a> ,                        | <a href="#">289</a>  |
| <a href="#">492</a> , <a href="#">499</a> , <a href="#">500</a> , <a href="#">504</a> , <a href="#">598</a> , <a href="#">599</a> ,                        | <code>\bookmark@named</code> .....   |
| <a href="#">701</a> , <a href="#">702</a> , <a href="#">705</a> , <a href="#">707</a> , <a href="#">712</a> , <a href="#">715</a> ,                        | <a href="#">360</a>  |
| <a href="#">722</a> , <a href="#">724</a> , <a href="#">730</a> , <a href="#">733</a> , <a href="#">735</a> , <a href="#">741</a> , <a href="#">744</a>    | <code>\bookmark@numbered</code> .....  |
| <code>\BKM@TestViewType</code> .....   | <a href="#">306</a>  |
| <a href="#">389</a> , <a href="#">390</a> ,  | <code>\bookmark@open</code> .....  |
| <a href="#">391</a> , <a href="#">394</a> , <a href="#">397</a> , <a href="#">400</a> , <a href="#">403</a> , <a href="#">406</a> , <a href="#">418</a>    | <a href="#">197</a>  |
| <code>\BKM@title</code> .....  | <code>\bookmark@page</code> .....  |
| <a href="#">841</a> ,  | <a href="#">377</a>  |
| <a href="#">926</a> , <a href="#">990</a> , <a href="#">1078</a> , <a href="#">1545</a> , <a href="#">1552</a> , <a href="#">1574</a>                      | <code>\bookmark@rawaction</code> .....   |
| <code>\BKM@toHexDigit</code> ...   | <a href="#">363</a>  |
| <a href="#">1104</a> , <a href="#">1110</a> , <a href="#">1119</a>   | <code>\bookmark@text</code> .....  |
| <code>\BKM@toRGB</code> .....  | ... <a href="#">813</a> , <a href="#">841</a> , <a href="#">963</a> , <a href="#">990</a> , <a href="#">1510</a> , <a href="#">1545</a>  |
| <a href="#">1055</a> , <a href="#">1087</a>  | <code>\bookmark@uri</code> .....   |
| <code>\BKM@toRGBComponent</code> .....   | <a href="#">361</a>  |
| ..... <a href="#">1089</a> , <a href="#">1090</a> , <a href="#">1091</a> , <a href="#">1093</a>  | <code>\bookmark@view</code> .....  |
| <code>\BKM@type</code> .....   | <a href="#">382</a>  |
| <a href="#">387</a> ,  | <code>\BookmarkAtEnd</code> .  |
| <a href="#">388</a> , <a href="#">411</a> , <a href="#">421</a> , <a href="#">432</a> , <a href="#">479</a> , <a href="#">781</a> , <a href="#">782</a>    | <a href="#">8</a> , <a href="#">13</a> , <a href="#">673</a> , <a href="#">1642</a> , <a href="#">1649</a>   |
| <code>\BKM@UnescapeHex</code> .....  | <code>\bookmarkdefinestyle</code> ...  |
| ..... <a href="#">137</a> , <a href="#">1209</a> , <a href="#">1211</a> , <a href="#">1245</a> ,   | <a href="#">7</a> , <a href="#">547</a> , <a href="#">674</a>  |
| <a href="#">1250</a> , <a href="#">1266</a> , <a href="#">1281</a> , <a href="#">1285</a> , <a href="#">1381</a> ,   | <code>\BookmarkDriverDefault</code> ...  |
| <a href="#">1384</a> , <a href="#">1422</a> , <a href="#">1432</a> , <a href="#">1449</a> , <a href="#">1469</a> , <a href="#">1475</a>                    | <a href="#">649</a> , <a href="#">664</a>  |
| <code>\BKM@uri</code> .....  | <code>\bookmarkget</code> .....  |
| <a href="#">848</a> , <a href="#">859</a> , <a href="#">863</a> , <a href="#">998</a> , <a href="#">1006</a> , <a href="#">1010</a> , <a href="#">1549</a> | <a href="#">7</a> , <a href="#">610</a> , <a href="#">610</a> , <a href="#">675</a>  |
|  | <code>\bookmarksetup</code> <a href="#">11</a> , <a href="#">14</a> , <a href="#">35</a> , <a href="#">40</a> , <a href="#">46</a> , <a href="#">52</a> ,                                    |
|  | <a href="#">57</a> , <a href="#">61</a> , <a href="#">167</a> , <a href="#">169</a> , <a href="#">172</a> , <a href="#">318</a> , <a href="#">583</a> , <a href="#">672</a>                  |
|  | <code>\bookmarksetupnext</code> .....  |
|  | <a href="#">181</a>  |
|  | <code>\bookmarkset</code> .....  |
|  | <a href="#">786</a> , <a href="#">791</a>  |
|  |  |
|  | <b>C</b>   |
|  | <code>\c@tocdepth</code> .....   |
|  | <a href="#">202</a> , <a href="#">204</a> , <a href="#">211</a>  |
|  | <code>\calc</code> .....   |
|  | <a href="#">73</a> , <a href="#">520</a> , <a href="#">524</a>   |
|  | <code>\catcode</code> .....  |
|  | <a href="#">1126</a> , <a href="#">1127</a>  |
|  | <code>\chapternumberline</code> .....  |
|  | <a href="#">788</a> , <a href="#">793</a>  |
|  | <code>\chardef</code> .....  |
|  | <a href="#">639</a> , <a href="#">641</a> , <a href="#">692</a>  |
|  | <code>\count@</code> .....   |
|  | <a href="#">105</a> , <a href="#">106</a> , <a href="#">108</a> , <a href="#">241</a> , <a href="#">245</a>  |



|  |  |
|--|--|
| <b>L</b>                                 |  |
| <code>\ltx@empty</code>                  | 170, 185   |
| <code>\ltx@firstofone</code>             | 914  |
| <code>\ltx@GlobalAppendToMacro</code>    | 182  |
| <code>\ltx@gobble</code>                 | 672, 673, 675  |
| <code>\ltx@gobbletwo</code>              | 674, 678, 679, 680, 684  |
| <code>\ltx@ifUndefined</code>            | 203, 213, 253, 688, 1594   |
| <code>\ltx@ifundefined</code>            | 612  |
| <code>\ltx@LocalAppendToMacro</code>     | 608  |
| <code>\ltx@LocToksA</code>               | 1603, 1606   |
| <code>\ltx@one</code>                    | 198, 307, 340, 343, 692  |
| <code>\ltx@space</code>                  | 613, 615   |
| <code>\ltx@undefined</code>              | 676, 761   |
| <code>\ltx@zero</code>                   | 198, 307, 340, 343   |
| <code>\luatexversion</code>              | 1600   |
| <b>M</b>                                 |  |
| <code>\maxdimen</code>                   | 200  |
| <code>\MessageBreak</code>               | 224, 264, 411, 432, 717,<br>727, 738, 746, 756, 1312, 1317, 1320                                 |
| <b>N</b>                                 |  |
| <code>\NeedsTeXFormat</code>             | 98,<br>803, 947, 1200, 1327, 1335, 1343  |
| <code>\newcommand</code>                 | 167, 181, 547, 610, 677,<br>681, 762, 810, 960, 1506, 1642, 1649                                 |
| <code>\newcount</code>                   | 806, 956, 1502   |
| <code>\newif</code>                      | 557, 687, 809, 959, 1505   |
| <code>\newpage</code>                    | 34   |
| <code>\newwrite</code>                   | 1357   |
| <code>\number</code>                     | 201,<br>368, 690, 774, 915, 1060, 1120, 1555   |
| <code>\numberline</code>                 | 785, 790   |
| <code>\numexpr</code>                    | 115  |
| <b>O</b>                                 |  |
| <code>\openout</code>                    | 1358   |
| <b>P</b>                                 |  |
| <code>\p@</code>                         | 1096   |
| <code>\PackageError</code>               | 371, 410, 572,<br>716, 745, 755, 850, 1000, 1234, 1403   |
| <code>\PackageInfo</code>                | 550  |
| <code>\PackageWarning</code>             | 223, 263, 431, 479, 560, 1643  |
| <code>\PackageWarningNoLine</code>       | 671, 709, 726, 737, 952  |
| <code>\paperheight</code>                | 73   |
| <code>\part</code>                       | 49   |
| <code>\partnumberline</code>             | 787, 792   |
| <code>\pdfbookmark</code>                | 676, 677, 761, 767, 771  |
| <code>\pdfextension</code>               | 653, 654   |
| <code>\pdfoutline</code>                 | 652, 654, 1297   |
| <code>\pdfstringdef</code>               | 841, 990, 1545   |
| <code>\ProcessKeyvalOptions</code>       | 668  |
| <code>\protected</code>                  | 654  |
| <code>\providecommand</code>             | 649, 1500  |
| <code>\ProvidesFile</code>               | 804, 948, 1201, 1328, 1336, 1344   |
| <code>\ProvidesPackage</code>            | 99   |
| <b>R</b>                                 |  |
| <code>\ReadBookmarks</code>              | 683, 800   |
| <code>\renewcommand</code>               | 682  |
| <code>\RequirePackage</code>             | 140, 1353, 1498, 1663  |
| <code>\romannumeral</code>               | 611  |
| <b>S</b>                                 |  |
| <code>\section</code>                    | 20, 39, 50, 55   |
| <code>\setbox</code>                     | 240  |
| <code>\setlength</code>                  | 527, 529, 532  |
| <code>\SetupKeyvalOptions</code>         | 141, 1621  |
| <code>\space</code>                      | 439,<br>453, 461, 469, 477, 497, 509, 514  |
| <code>\special</code>                    | 909, 1057, 1331, 1339, 1347  |
| <code>\SpecialDvipdfmxOutlineOpen</code> | 639, 641, 692, 697   |
| <code>\ss</code>                         | 33   |
| <code>\strip@pt</code>                   | 535  |
| <code>\subpdfbookmark</code>             | 679, 769, 775  |
| <code>\subsection</code>                 | 21, 31, 33, 45, 56   |
| <code>\subsubsection</code>              | 32, 51   |
| <b>T</b>                                 |  |
| <code>\the</code>                        | 108, 115,<br>245, 815, 822, 831, 965, 972,<br>981, 1516, 1522, 1530, 1591, 1606                  |
| <code>\topmargin</code>                  | 73   |
| <b>U</b>                                 |  |
| <code>\usepackage</code>                 | 3, 4, 5  |
| <b>W</b>                                 |  |
| <code>\write</code>                      | 1374, 1553   |
| <b>X</b>                                 |  |
| <code>\x</code>                          | 107, 110, 1604, 1613   |
| <code>\XeTeXrevision</code>              | 690  |
| <code>\XeTeXversion</code>               | 690  |
| <b>Z</b>                                 |  |
| <code>\z@</code>                         | 240, 369, 478, 641, 697,<br>807, 820, 931, 957, 969, 1075,<br>1095, 1485, 1503, 1520, 1533, 1569 |