

The `bookmark` package

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Abstract

This package implements a new bookmark (outline) organization for package `hyperref`. Bookmark properties such as style and color can now be set. Other action types are available (URL, GoToR, Named). The bookmarks are generated in the first compile run. Package `hyperref` uses two runs.

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

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[2010/09/02 v1.14]		44
[2010/09/25 v1.15]		44
[2010/10/19 v1.16]		44
[2010/10/25 v1.17]		44
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[2011/03/20 v1.19]		44
[2011/04/13 v1.20]		44
[2011/04/21 v1.21]		44
[2011/05/13 v1.22]		44
[2011/09/19 v1.23]		44
[2011/12/02 v1.24]		44
[2016/05/16 v1.25]		45
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1 Documentation

1.1 Introduction

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

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

In the same way as `hyperref` [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 $\text{\LaTeX}$ 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 $\text{\LaTeX}$ runs depending on a global `draft`, then package `ifdraft` and $\text{\LaTeX}$'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`, `dvipdfmx` (`xetex` and older name `dvipdfm`), and `vtex`. The $\text{\TeX}$ engines `pdf $\text{\TeX}$` , `X $\text{\TeX}$` , and `V $\text{\TeX}$` are automatically detected. The default for the DVI drivers is `dvips`. This can be changed in the configuration file `bookmark.cfg` by `\BookmarkDriverDefault`, e.g.:

```
\def\BookmarkDriverDefault{dvipdfm}
```

The current versions of the drivers uses new $\text{\LaTeX}$ -hooks and tests if the PDF management is active and so requires a format newer than 2022-06-01.

Open bookmarks with dvipdfmx. Older version of the package had an option `dvipdfmx-outline-open` to activate code which allows to specify the open status of an outline entry. The package now assumes that all used `dvipdfmx` version are current enough to understand this code and so activates the code always. The option itself will be ignored.

1.2.3 Layout options

Font options.

bold: The bookmark is shown with a bold font if the PDF viewer supports this (since PDF 1.4).

italic: An italic font is used (since PDF 1.4).

Both **bold** and **italic** can be used together. Using value `false` disables the font option.

Color option. Colored bookmarks are a feature of PDF 1.4, they are not supported by all PDF viewers.

color: Here the color can be given as color specification of packages `color` or `xcolor`. An empty value means that the color property is not set. Without package `xcolor` the recognized values are restricted to

- Empty value, no color is set,
example: `color={}`
- Explicit color specification of color model `rgb`,
example for red: `color=[rgb]{1,0,0}`
- Explicit color specification of color model `gray`,
example for dark gray: `color=[gray]{0.25}`

Note that this restriction also holds if package `color` is loaded. With `xcolor`, however, the full range of color specifications can be used.

1.2.4 Action options

dest: Destination name.

page: Page number, first page is 1.

view: View specification, examples:

`view={FitB}`, `view={FitH 842}`, `view={XYZ 0 100 null}` Some view specification parameters expect numbers as parameters with unit bp. They can be given either as plain numbers or as length expressions inside `\calc`. Expressions of package `calc` are supported if the package is loaded. Otherwise ϵ -TeX's `\dimexpr` is used. Example:

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

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

named: Named action name:

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

gotor: Name of the external PDF file.

uri: URI specification.

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

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

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

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

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

1.2.5 Level options

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

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

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

level: Sets the level, see the description above. If option `level` is given without value, then the default behaviour is restored, that the ‘current level’ is used as level value. Since version 2010/10/19 v1.16 package `bookmark` also supports names `part`, `section` and other, if the macros `\toclevel@part`, `\toclevel@section` are defined (done by package `hyperref`, see option `bookmarkdepth`).

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

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

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

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

1.2.6 Style definitions

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

`\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, gtor, 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.

The driver `pdftex` 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, this driver 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.

`dvips` uses now the new $\text{\LaTeX}$ hook `shipout/lastpage`.

- 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 Structure destinations

If tagging is activated with e.g.

```
\DocumentMetadata{testphase=phase-III} %or some other phase a
```

the outlines will also use structure destinations, these are destination bound not to a page but to a structure. This works only with `pdftex`, `luatex` and `xetex/dvipdfmx`.

1.6 Limitations/ToDos

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

2 Example

```
1 \example
2 \documentclass{article}
3 \usepackage{xcolor}[2007/01/21]
4 \usepackage{hyperref}
5 \usepackage[
6   open,
7   openlevel=2,
8   atend
9 ]{bookmark}[2019/12/03]
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: \text{"A"O"U"a"o"u}}
34 \newpage
35 \bookmarksetup{
36   bold,
37   color=[rgb]{1,0,0}
38 }
39 \section{Very important section}
40 \bookmarksetup{
41   italic,
42   bold=false,
43   color=blue
44 }
45 \subsection{Italic section}
46 \bookmarksetup{
47   italic=false
48 }
49 \part{Misc}
50 \section{Diverse}
51 \subsubsection{Subsubsection, omitting subsection}
52 \bookmarksetup{
53   startatroot
54 }
55 \section{Last section outside part}
56 \subsection{Subsection}
57 \bookmarksetup{
58   color={}
59 }
60 \begingroup
61   \bookmarksetup{level=0, color=green!80!black}
62   \bookmark[named=FirstPage]{First page}
63   \bookmark[named=LastPage]{Last page}
64   \bookmark[named=PrevPage]{Previous page}
65   \bookmark[named=NextPage]{Next page}
66 \endgroup
67 \bookmark[
68   page=2,
69   view=FitH 800
70 ]{Page 2, FitH 800}
71 \bookmark[
72   page=2,
73   view=FitBH \calc{\paperheight-\topmargin-1in-\headheight-\headsep}
74 ]{Page 2, FitBH top of text body}
75 \bookmark[
76   uri={http://www.dante.de/},
77   color=magenta
78 ]{Dante homepage}
79 \bookmark[
80   goto={t.pdf},
81   page=1,
82   view={XYZ 0 1000 null},
83   color=cyan!75!black
84 ]{File t.pdf}
85 \bookmark[named=FirstPage]{First page}
86 \bookmark[rellevel=1, named=LastPage]{Last page (rellevel=1)}

```

```

87 \bookmark[named=PrevPage]{Previous page}
88 \bookmark[level=0, named=FirstPage]{First page (level=0)}
89 \bookmark[
90   rellevel=1,
91   keeplevel,
92   named=LastPage
93 ]{Last page (rellevel=1, keeplevel)}
94 \bookmark[named=PrevPage]{Previous page}
95 \end{document}
96 </example>

```

3 Implementation

3.1 Package

```

97 <*package>
98 \NeedsTeXFormat{LaTeX2e}
99 \ProvidesPackage{bookmark}%
100 [2023-12-10 v1.31 PDF bookmarks (H0)]%

```

3.1.1 Requirements

ϵ - $\text{T}_{\text{E}}\text{X}$.

$\backslash\text{BKM@CalcExpr}$

```

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

```

Escape features of pdf $\text{T}_{\text{E}}\text{X}$.

$\backslash\text{BKM@EscapeName}$

```

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

```

$\backslash\text{BKM@EscapeString}$

```

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 }%
```

Some helper commands Replaces some commands from ltxcmds:

\BKM@ReturnAfterFi

\BKM@space

```
140 \ExplSyntaxOn
```

\BKM@GlobalAppendToMacro

```
141 \let\BKM@LocalAppendToMacro\tl_put_right:Nn
```

\BKM@LocalAppendToMacro

```
142 \let\BKM@GlobalAppendToMacro\tl_gput_right:Nn
```

```
143 \ExplSyntaxOff
```

```
144 \def\BKM@space{ }
```

```
145 \long\def\BKM@ReturnAfterFi#1\fi{\fi#1}
```

Packages. Don't load packages loaded by xpackagehyperref

```
146 \RequirePackage{hyperref}[2010/06/18]
```

3.1.2 Package options

```
147 \SetupKeyvalOptions{family=BKM,prefix=BKM@}
```

```
148 \DeclareLocalOptions{%
```

```
149   atend,%
```

```
150   bold,%
```

```
151   color,%
```

```
152   depth,%
```

```
153   dest,%
```

```
154   draft,%
```

```
155   final,%
```

```
156   gotor,%
```

```
157   italic,%
```

```
158   keeplevel,%
```

```
159   level,%
```

```
160   named,%
```

```
161   numbered,%
```

```
162   open,%
```

```
163   openlevel,%
```

```
164   page,%
```

```
165   rawaction,%
```

```
166   rellevel,%
```

```
167   srcfile,%
```

```
168   srcline,%
```

```
169   startatroot,%
```

```
170   uri,%
```

```
171   view,%
```

```
172 }
```

\bookmarksetup

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

\BKM@setup

```
174 \def\BKM@setup#1{%
```

```
175   \bookmarksetup{#1}%
```

```

176 \ifx\BKM@HookNext\@empty
177 \else
178 \expandafter\bookmarksetup\expandafter{\BKM@HookNext}%
179 \BKM@HookNextClear
180 \fi
181 \BKM@hook
182 \ifBKM@keeplevel
183 \else
184 \xdef\BKM@currentlevel{\BKM@level}%
185 \fi
186 }

\bookmarksetupnext

187 \newcommand*\bookmarksetupnext}[1]{%
188 \BKM@GlobalAppendToMacro\BKM@HookNext{,#1}%
189 }

\BKM@setupnext

\BKM@HookNextClear

190 \def\BKM@HookNextClear{%
191 \global\let\BKM@HookNext\@empty
192 }

\BKM@HookNext

193 \BKM@HookNextClear

194 \DeclareBoolOption{draft}
195 \DeclareComplementaryOption{final}{draft}

\BKM@DisableOptions

196 \def\BKM@DisableOptions{%
197 \DisableKeyvalOption[action=warning,package=bookmark]%
198 {BKM}{draft}%
199 \DisableKeyvalOption[action=warning,package=bookmark]%
200 {BKM}{final}%
201 }

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

\bookmark@open

203 \def\bookmark@open{%
204 \ifBKM@open\@ne\else\z@\fi
205 }

206 \DeclareStringOption[\maxdimen]{openlevel}

\BKM@openlevel

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

208 %\DeclareStringOption[\c@tocdepth]{depth}
209 \@ifundefined{Hy@bookmarksdepth}{%
210 \def\BKM@depth{\c@tocdepth}%
211 }{%
212 \let\BKM@depth\Hy@bookmarksdepth
213 }
214 \define@key{BKM}{depth}[]{%
215 \edef\BKM@param{#1}%
216 \ifx\BKM@param\@empty
217 \def\BKM@depth{\c@tocdepth}%
218 \else
219 \@ifundefined{toclevel@\BKM@param}{%
220 \@onelevel@sanitize\BKM@param

```

```

221 \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
222 \ifcase 0\expandafter\ifx\BKM@temp-1\fi
223 \expandafter\ifnum\expandafter`\BKM@temp>47 %
224 \expandafter\ifnum\expandafter`\BKM@temp<58 %
225 1%
226 \fi
227 \fi
228 \relax
229 \PackageWarning{bookmark}{%
230 Unknown document division name (\BKM@param)\MessageBreak
231 for option `depth'%
232 }%
233 \else
234 \BKM@SetDepthOrLevel\BKM@depth\BKM@param
235 \fi
236 }{%
237 \BKM@SetDepthOrLevel\BKM@depth{%
238 \csname toplevel@\BKM@param\endcsname
239 }%
240 }%
241 \fi
242 }

```

\bookmark@depth

```

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

```

\BKM@SetDepthOrLevel

```

244 \def\BKM@SetDepthOrLevel#1#2{%
245 \begingroup
246 \setbox\z@=\hbox{%
247 \count@=#2\relax
248 \expandafter
249 }%
250 \expandafter\endgroup
251 \expandafter\def\expandafter#1\expandafter{\the\count@}%
252 }

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

```

```

279     }%
280   }%
281   \fi
282 }

```

\BKM@MacroCurrentLevel

```

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

284 \DeclareBoolOption{keeplevel}
285 \DeclareBoolOption{startatroot}

```

\BKM@startatrootfalse

```

286 \def\BKM@startatrootfalse{%
287   \global\let\ifBKM@startatroot\iffalse
288 }

```

\BKM@startatroottrue

```

289 \def\BKM@startatroottrue{%
290   \global\let\ifBKM@startatroot\iftrue
291 }

292 \define@key{BKM}{rellevel}{%
293   \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
294 }

```

\bookmark@level

```

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

```

\BKM@currentlevel

```

296 \def\BKM@currentlevel{0}

```

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

```

297 \DeclareBoolOption[%
298   \ifHy@bookmarksnumbered true\else false\fi
299 ]{numbered}
300 \g@addto@macro\BKM@numberedtrue{%
301   \let\ifHy@bookmarksnumbered\iftrue
302 }
303 \g@addto@macro\BKM@numberedfalse{%
304   \let\ifHy@bookmarksnumbered\iffalse
305 }
306 \g@addto@macro\Hy@bookmarksnumberedtrue{%
307   \let\ifBKM@numbered\iftrue
308 }
309 \g@addto@macro\Hy@bookmarksnumberedfalse{%
310   \let\ifBKM@numbered\iffalse
311 }

```

\bookmark@numbered

```

312 \def\bookmark@numbered{%
313   \ifBKM@numbered\@ne\else\z@\fi
314 }

```

Redefinitions **hyperref's options**

\BKM@PatchHyperrefOption

```

315 \def\BKM@PatchHyperrefOption#1{%
316   \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
317 }

```

`\BKM@@PatchHyperrefOption`

```
318 \def\BKM@@PatchHyperrefOption#1{%
319   \expandafter\BKM@@@PatchHyperrefOption#1{##1}\BKM@nil#1%
320 }
```

`\BKM@@@PatchHyperrefOption`

```
321 \def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
322   \def##1{%
323     #1%
324     \bookmarksetup{#3={##1}}%
325   }%
326 }

327 \BKM@PatchHyperrefOption{bookmarksopen}{open}
328 \BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
329 \BKM@PatchHyperrefOption{bookmarksdepth}{depth}
```

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

```
330 \bitsetReset{BKM@FontStyle}%
331 \define@key{BKM}{italic}[true]{%
332   \expandafter\ifx\csname if#1\endcsname\iftrue
333     \bitsetSet{BKM@FontStyle}{0}%
334   \else
335     \bitsetClear{BKM@FontStyle}{0}%
336   \fi
337 }%
338 \define@key{BKM}{bold}[true]{%
339   \expandafter\ifx\csname if#1\endcsname\iftrue
340     \bitsetSet{BKM@FontStyle}{1}%
341   \else
342     \bitsetClear{BKM@FontStyle}{1}%
343   \fi
344 }%
```

`\bookmark@italic`

```
345 \def\bookmark@italic{%
346   \ifnum\bitsetGet{BKM@FontStyle}{0}=1 \@ne\else\z@\fi
347 }
```

`\bookmark@bold`

```
348 \def\bookmark@bold{%
349   \ifnum\bitsetGet{BKM@FontStyle}{1}=1 \@ne\else\z@\fi
350 }
```

`\BKM@PrintStyle`

```
351 \def\BKM@PrintStyle{%
352   \bitsetGetDec{BKM@FontStyle}%
353 }
```

Options for color.

```
354 \define@key{BKM}{color}{%
355   \HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}%
356 }
```

`\BKM@color`

```
357 \let\BKM@color\@empty
```

`\bookmark@color`

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

3.1.3 Action options

```
359 \def\BKM@temp#1{%
360   \DeclareStringOption{#1}%
361   \expandafter\edef\csname bookmark@#1\endcsname{%
362     \expandafter\noexpand\csname BKM@#1\endcsname
363   }%
364 }

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

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

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

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

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

370 \define@key{BKM}{page}{%
371   \def\BKM@page{#1}%
372   \ifx\BKM@page\@empty
373   \else
374     \edef\BKM@page{\number\BKM@page}%
375     \ifnum\BKM@page>\z@
376     \else
377       \PackageError{bookmark}{Page must be positive}\@ehc
378       \def\BKM@page{1}%
379     \fi
380   \fi
381 }

\BKM@page
382 \let\BKM@page\@empty

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

384 \define@key{BKM}{view}{%
385   \BKM@CheckView{#1}%
386 }

\BKM@view
387 \let\BKM@view\@empty

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

BKM@CheckView
389 \def\BKM@CheckView#1{%
390   \BKM@CheckViewType#1 \@nil
391 }

\BKM@CheckViewType
392 \def\BKM@CheckViewType#1 #2\@nil{%
393   \def\BKM@type{#1}%
394   \@onelevel@sanitize\BKM@type
```

```

395 \BKM@TestViewType{Fit}{}%
396 \BKM@TestViewType{FitB}{}%
397 \BKM@TestViewType{FitH}{}%
398 \BKM@CheckParam#2 \@nil{top}%
399 }%
400 \BKM@TestViewType{FitBH}{%
401 \BKM@CheckParam#2 \@nil{top}%
402 }%
403 \BKM@TestViewType{FitV}{%
404 \BKM@CheckParam#2 \@nil{bottom}%
405 }%
406 \BKM@TestViewType{FitBV}{%
407 \BKM@CheckParam#2 \@nil{bottom}%
408 }%
409 \BKM@TestViewType{FitR}{%
410 \BKM@CheckRect{#2}{ }%
411 }%
412 \BKM@TestViewType{XYZ}{%
413 \BKM@CheckXYZ{#2}{ }%
414 }%
415 \@car{%
416 \PackageError{bookmark}{%
417 Unknown view type `BKM@type',\MessageBreak
418 using `FitH' instead%
419 } \@ehc
420 \def\BKM@view{FitH}%
421 }%
422 \@nil
423 }

```

\BKM@TestViewType

```

424 \def\BKM@TestViewType#1{%
425 \def\BKM@temp{#1}%
426 \@onelevel@sanitize\BKM@temp
427 \ifx\BKM@type\BKM@temp
428 \let\BKM@view\BKM@temp
429 \expandafter\@car
430 \else
431 \expandafter\@gobble
432 \fi
433 }

```

BKM@CheckParam

```

434 \def\BKM@CheckParam#1 #2\@nil#3{%
435 \def\BKM@param{#1}%
436 \ifx\BKM@param\@empty
437 \PackageWarning{bookmark}{%
438 Missing parameter (#3) for `BKM@type',\MessageBreak
439 using 0%
440 }%
441 \def\BKM@param{0}%
442 \else
443 \BKM@CalcParam
444 \fi
445 \edef\BKM@view{\BKM@view\space\BKM@param}%
446 }

```

BKM@CheckRect

```

447 \def\BKM@CheckRect#1#2{%
448 \BKM@@CheckRect#1#2#2#2\@nil
449 }

```

\BKM@@CheckRect

```
450 \def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
451   \def\BKM@temp{0}%
452   \def\BKM@param{#1}%
453   \ifx\BKM@param\@empty
454     \def\BKM@param{0}%
455     \def\BKM@temp{1}%
456   \else
457     \BKM@CalcParam
458   \fi
459   \edef\BKM@view{\BKM@view\space\BKM@param}%
460   \def\BKM@param{#2}%
461   \ifx\BKM@param\@empty
462     \def\BKM@param{0}%
463     \def\BKM@temp{1}%
464   \else
465     \BKM@CalcParam
466   \fi
467   \edef\BKM@view{\BKM@view\space\BKM@param}%
468   \def\BKM@param{#3}%
469   \ifx\BKM@param\@empty
470     \def\BKM@param{0}%
471     \def\BKM@temp{1}%
472   \else
473     \BKM@CalcParam
474   \fi
475   \edef\BKM@view{\BKM@view\space\BKM@param}%
476   \def\BKM@param{#4}%
477   \ifx\BKM@param\@empty
478     \def\BKM@param{0}%
479     \def\BKM@temp{1}%
480   \else
481     \BKM@CalcParam
482   \fi
483   \edef\BKM@view{\BKM@view\space\BKM@param}%
484   \ifnum\BKM@temp>\z@
485     \PackageWarning{bookmark}{Missing parameters for '\BKM@type'}%
486   \fi
487 }
```

\BKM@CheckXYZ

```
488 \def\BKM@CheckXYZ#1#2{%
489   \BKM@@CheckXYZ#1#2#2\@nil
490 }
```

\BKM@@CheckXYZ

```
491 \def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%
492   \def\BKM@param{#1}%
493   \let\BKM@temp\BKM@param
494   \@onelevel@sanitize\BKM@temp
495   \ifx\BKM@param\@empty
496     \let\BKM@param\BKM@null
497   \else
498     \ifx\BKM@temp\BKM@null
499     \else
500       \BKM@CalcParam
501     \fi
502   \fi
503   \edef\BKM@view{\BKM@view\space\BKM@param}%
504   \def\BKM@param{#2}%
505   \let\BKM@temp\BKM@param
506   \@onelevel@sanitize\BKM@temp
```

```

507 \ifx\BKM@param\@empty
508   \let\BKM@param\BKM@null
509 \else
510   \ifx\BKM@temp\BKM@null
511     \else
512       \BKM@CalcParam
513     \fi
514   \fi
515 \edef\BKM@view{\BKM@view\space\BKM@param}%
516 \def\BKM@param{#3}%
517 \ifx\BKM@param\@empty
518   \let\BKM@param\BKM@null
519 \fi
520 \edef\BKM@view{\BKM@view\space\BKM@param}%
521 }

\BKM@null

522 \def\BKM@null{null}
523 \@onelevel@sanitize\BKM@null

\BKM@CalcParam

524 \def\BKM@CalcParam{%
525   \begingroup
526   \let\calc\@firstofone
527   \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
528 }

\BKM@@CalcParam

529 \def\BKM@@CalcParam#1#2#3\@nil{%
530   \ifx\calc#1%
531     \@ifundefined{calc@assign@dimen}{%
532       \@ifundefined{dimexpr}{%
533         \setlength{\dimen@}{#2}%
534       }{%
535         \setlength{\dimen@}{\dimexpr#2\relax}%
536       }%
537     }{%
538       \setlength{\dimen@}{#2}%
539     }%
540     \dimen@.99626\dimen@
541     \edef\BKM@param{\strip@pt\dimen@}%
542     \expandafter\endgroup
543     \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
544   \else
545     \endgroup
546   \fi
547 }

```

3.1.4 Option `atend`

```

548 \DeclareBoolOption{atend}
549 \g@addto@macro\BKM@DisableOptions{%
550   \DisableKeyvalOption[action=warning,package=bookmark]%
551     {BKM}{atend}%
552 }

```

3.1.5 Option `style`

`\bookmarkdefinestyle`

```

553 \newcommand*{\bookmarkdefinestyle}[2]{%
554   \@ifundefined{BKM@style@#1}{%
555     }{%
556       \PackageInfo{bookmark}{Redefining style `#1'}%

```

```

557 }%
558 \@namedef{BKM@style@#1}{#2}%
559 }

560 \define@key{BKM}{style}{%
561   \BKM@StyleCall{#1}%
562 }
563 \newif\ifBKM@ok

```

\BKM@StyleCall

```

564 \def\BKM@StyleCall#1{%
565   \@ifundefined{BKM@style@#1}{%
566     \PackageWarning{bookmark}{%
567       Ignoring unknown style `#1'%
568     }%
569   }{%

```

Check style stack.

```

570   \BKM@oktrue
571   \edef\BKM@StyleCurrent{#1}%
572   \@onelevel@sanitize\BKM@StyleCurrent
573   \let\BKM@StyleEntry\BKM@StyleEntryCheck
574   \BKM@StyleStack
575   \ifBKM@ok
576     \expandafter\@firstofone
577   \else
578     \PackageError{bookmark}{%
579       Ignoring recursive call of style `BKM@StyleCurrent'%
580     }\@ehc
581     \expandafter\@gobble
582   \fi
583   {%

```

Push current style on stack.

```

584   \let\BKM@StyleEntry\relax
585   \edef\BKM@StyleStack{%
586     \BKM@StyleEntry{\BKM@StyleCurrent}%
587     \BKM@StyleStack
588   }%

```

Call style.

```

589   \expandafter\expandafter\expandafter\bookmarksetup
590   \expandafter\expandafter\expandafter{%
591     \csname BKM@style@\BKM@StyleCurrent\endcsname
592   }%

```

Pop current style from stack.

```

593   \BKM@StyleStackPop
594   }%
595 }%
596 }

```

\BKM@StyleStackPop

```

597 \def\BKM@StyleStackPop{%
598   \let\BKM@StyleEntry\relax
599   \edef\BKM@StyleStack{%
600     \expandafter\@gobbletwo\BKM@StyleStack
601   }%
602 }

```

\BKM@StyleEntryCheck

```

603 \def\BKM@StyleEntryCheck#1{%
604   \def\BKM@temp{#1}%
605   \ifx\BKM@temp\BKM@StyleCurrent

```

```

606 \BKM@okfalse
607 \fi
608 }

```

\BKM@StyleStack

```

609 \def\BKM@StyleStack{}

```

3.1.6 Options for source file location

```

610 \DeclareStringOption{srcline}
611 \DeclareStringOption{srcfile}

```

3.1.7 Hook support

\BKM@hook

```

612 \def\BKM@hook{}

613 \define@key{BKM}{addtohook}{%
614 \BKM@LocalAppendToMacro\BKM@hook{#1}%
615 }

```

bookmarkget

```

616 \newcommand*{\bookmarkget}[1]{%
617 \romannumeral0%
618 \@ifundefined{bookmark@#1}{%
619 \BKM@space
620 }{%
621 \expandafter\expandafter\expandafter\BKM@space
622 \csname bookmark@#1\endcsname
623 }%
624 }

```

3.1.8 Driver setup and loading

Driver detection.

\BKM@DefineDriverKey

```

625 \def\BKM@DefineDriverKey#1{%
626 \define@key{BKM}{#1}[]{%
627 \def\BKM@driver{#1}%
628 }%
629 \g@addto@macro\BKM@DisableOptions{%
630 \DisableKeyvalOption[action=warning,package=bookmark]{%
631 {BKM}{#1}%
632 }%
633 }

634 \BKM@DefineDriverKey{pdftex}
635 \BKM@DefineDriverKey{dvips}
636 \BKM@DefineDriverKey{dviptfm}
637 \BKM@DefineDriverKey{dviptfmx}
638 \BKM@DefineDriverKey{xetex}
639 \BKM@DefineDriverKey{vtex}
640 \define@key{BKM}{dviptfmx-outline-open}[true]{%
641 \PackageWarning{bookmark}{Option 'dviptfmx-outline-open' is obsolete
642 and ignored}{}}

```

\bookmark@driver

```

643 \def\bookmark@driver{\BKM@driver}

644 \InputIfFileExists{bookmark.cfg}{}{}

```

\BookmarkDriverDefault

```

645 \providecommand*\BookmarkDriverDefault{dvips}

```

\BKM@driver LuaTeX and pdfTeX share driver.

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

Process options.

```
664 \ProcessKeyvalOptions*
665 \BKM@DisableOptions
```

Option draft

```
666 \ifBKM@draft
667   \PackageWarningNoLine{bookmark}{Draft mode on}%
668   \let\bookmarksetup\@gobble
669   \let\BookmarkAtEnd\@gobble
670   \let\bookmarkdefinestyle\@gobbletwo
671   \let\bookmarkget\@gobble
672   \let\pdfbookmark\@undefined
673   \newcommand*{\pdfbookmark}[3][{}]{%
674     \let\currentpdfbookmark\@gobbletwo
675     \let\subpdfbookmark\@gobbletwo
676     \let\belowpdfbookmark\@gobbletwo
677     \newcommand*{\bookmark}[2][{}]{%
678       \renewcommand*{\Hy@writebookmark}[5]{%
679         \let\ReadBookmarks\relax
680         \let\BKM@DefGotoNameAction\@gobbletwo % package `hypdestopt'
681         \expandafter\endinput
682       \fi
```

Driver validation and loading.

```
683 \def\BKM@temp{dvipdfmx}%
684 \ifx\BKM@temp\BKM@driver
685   \def\BKM@driver{dvipdfm}%
686 \fi
687 \def\BKM@temp{pdftex}%
688 \ifpdf
689   \ifx\BKM@temp\BKM@driver
690     \else
691       \PackageWarningNoLine{bookmark}{%
692         Wrong driver ``BKM@driver', using `pdftex' instead%
693       }%
694       \let\BKM@driver\BKM@temp
695     \fi
696   \else
697     \ifx\BKM@temp\BKM@driver
698       \PackageError{bookmark}{%
699         Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
```

```

700     Package loading is aborted%
701 } \@ehc
702 \expandafter\expandafter\expandafter\endinput
703 \fi
704 \def\BKM@temp{dvipdfm}%
705 \ifxetex
706   \ifx\BKM@temp\BKM@driver
707   \else
708     \PackageWarningNoLine{bookmark}{%
709       Wrong driver `\'BKM@driver', \MessageBreak
710       using `dvipdfm' for XeTeX instead%
711     }%
712     \let\BKM@driver\BKM@temp
713   \fi
714 \else
715   \def\BKM@temp{vtex}%
716   \ifvtex
717     \ifx\BKM@temp\BKM@driver
718     \else
719       \PackageWarningNoLine{bookmark}{%
720         Wrong driver `\'BKM@driver', \MessageBreak
721         using `vtex' for VTeX instead%
722       }%
723       \let\BKM@driver\BKM@temp
724     \fi
725   \else
726     \ifx\BKM@temp\BKM@driver
727     \PackageError{bookmark}{%
728       Wrong driver, VTeX is not running in PDF mode.\MessageBreak
729       Package loading is aborted%
730     } \@ehc
731     \expandafter\expandafter\expandafter\endinput
732   \fi
733 \fi
734 \fi
735 \fi
736 \InputIfFileExists{bkm-\BKM@driver.def}{}{}%
737 \PackageError{bookmark}{%
738   Unsupported driver `\'BKM@driver'.\MessageBreak
739   Package loading is aborted%
740 } \@ehc
741 \endinput
742 }

```

3.1.9 Compatibility for hyperref

\pdfbookmark

```

743 \let\pdfbookmark\@undefined
744 \newcommand*{\pdfbookmark}[3][0]{%
745   \bookmark[level=#1,dest={#3.#1}]{#2}%
746   \hyper@anchorstart{#3.#1}\hyper@anchorend
747 }

```

\currentpdfbookmark

```

748 \def\currentpdfbookmark{%
749   \pdfbookmark[\BKM@currentlevel]%
750 }

```

\subpdfbookmark

```

751 \def\subpdfbookmark{%
752   \BKM@CalcExpr\BKM@CalcResult\BKM@currentlevel+1%
753   \expandafter\pdfbookmark\expandafter[\BKM@CalcResult]%
754 }

```

\belowpdfbookmark

```
755 \def\belowpdfbookmark#1#2{%
756   \xdef\BKM@temp{\number\BKM@currentlevel}%
757   \subpdfbookmark{#1}{#2}%
758   \global\let\BKM@currentlevel\BKM@temp
759 }
```

Section number, text, label, level, file

\Hy@writebookmark

```
760 \def\Hy@writebookmark#1#2#3#4#5{%
761   \ifnum#4>\BKM@depth\relax
762   \else
763     \edef\BKM@type{#5}%
764     \ifx\BKM@type\Hy@bookmarkstype
765       \begingroup
766         \ifBKM@numbered
767           \let\numberline\Hy@numberline
768           \let\booknumberline\Hy@numberline
769           \let\partnumberline\Hy@numberline
770           \let\chapternumberline\Hy@numberline
771         \else
772           \let\numberline\@gobble
773           \let\booknumberline\@gobble
774           \let\partnumberline\@gobble
775           \let\chapternumberline\@gobble
776         \fi
777         \bookmark[level=#4,dest={\HyperDestNameFilter{#3}}]{#2}%
778       \endgroup
779     \fi
780   \fi
781 }
```

\ReadBookmarks

```
782 \let\ReadBookmarks\relax
783 </package>
```

3.2 Driver for dvipdfm

```
784 <dvipdfm>
785 \NeedsTeXFormat{LaTeX2e}
786 \ProvidesFile{bkm-dvipdfm.def}%
787 [2023-12-10 v1.31 bookmark driver for dvipdfm (H0)]%
```

\BKM@id

```
788 \newcount\BKM@id
789 \BKM@id=\z@
```

\BKM@0

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

\ifBKM@sw

```
791 \newif\ifBKM@sw
```

\BKM@struct@dest Support for structure destinations in the outline.

```
792 \newcommand\BKM@struct@dest{}
793 \ExplSyntaxOn
794 \IfDocumentMetadataTF
795 {
796   \tag_if_active:T
797   {
```

```

798     \def\BKM@struct@dest{/SD~@pdf.SDest.\BKM@dest}
799   }
800
801   }{}
802 \ExplSyntaxOff

```

\bookmark

```

803 \newcommand*{\bookmark}[2][\%
804   \if@filesw
805     \begingroup
806       \def\bookmark@text{#2}%
807       \BKM@setup{#1}%
808       \edef\BKM@prev{\the\BKM@id}%
809       \global\advance\BKM@id\@ne
810       \BKM@swtrue
811       \@whiles\ifBKM@sw\fi{%
812         \def\BKM@abslevel{1}%
813         \ifnum\ifBKM@startatroot\z@else\BKM@prev\fi=\z@
814           \BKM@startatrootfalse
815           \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
816             0{\BKM@level}\BKM@abslevel
817           }%
818           \BKM@swfalse
819         \else
820           \expandafter\expandafter\expandafter\BKM@getx
821             \csname BKM@\BKM@prev\endcsname
822           \ifnum\BKM@level>\BKM@x@level\relax
823             \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
824             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
825               {\BKM@prev}{\BKM@level}\BKM@abslevel
826             }%
827             \BKM@swfalse
828           \else
829             \let\BKM@prev\BKM@x@parent
830           \fi
831         \fi
832       }%
833       \csname HyPsd@XeTeXBigCharstrue\endcsname
834       \pdfstringdef\BKM@title{\bookmark@text}%
835       \edef\BKM@FLAGS{\BKM@PrintStyle}%
836       \let\BKM@action\@empty
837       \ifx\BKM@goto\@empty
838         \ifx\BKM@dest\@empty
839           \ifx\BKM@named\@empty
840             \ifx\BKM@rawaction\@empty
841               \ifx\BKM@uri\@empty
842                 \ifx\BKM@page\@empty
843                   \PackageError{bookmark}{Missing action}\@ehc
844                   \edef\BKM@action{/Dest[@page1/Fit]]}%
845                 \else
846                   \ifx\BKM@view\@empty
847                     \def\BKM@view{Fit}%
848                   \fi
849                   \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]]}%
850                 \fi
851               \else
852                 \BKM@EscapeString\BKM@uri
853                 \edef\BKM@action{%
854                   /A<<%
855                   /S/URI%
856                   /URI(\BKM@uri)%
857                   >>%
858                 }%

```

```

859         \fi
860     \else
861         \edef\BKM@action{/A<<\BKM@rawaction>>}%
862     \fi
863 \else
864     \BKM@EscapeName\BKM@named
865     \edef\BKM@action{%
866         /A<</S/Named/N/\BKM@named>>%
867     }%
868 \fi
869 \else
870     \BKM@EscapeString\BKM@dest
871     \edef\BKM@action{%
872         /A<<%
873         /S/GoTo%
874         /D(\BKM@dest)%
875         \BKM@struct@dest
876         >>%
877     }%
878 \fi
879 \else
880     \ifx\BKM@dest\@empty
881         \ifx\BKM@page\@empty
882             \def\BKM@page{0}%
883         \else
884             \BKM@CalcExpr\BKM@page\BKM@page-1%
885         \fi
886         \ifx\BKM@view\@empty
887             \def\BKM@view{Fit}%
888         \fi
889         \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
890     \else
891         \BKM@EscapeString\BKM@dest
892         \edef\BKM@action{/D(\BKM@dest)}%
893     \fi
894     \BKM@EscapeString\BKM@gotor
895     \edef\BKM@action{%
896         /A<<%
897         /S/GoToR%
898         /F(\BKM@gotor)%
899         \BKM@action
900         >>%
901     }%
902 \fi
903 \special{pdf:%
904     out
905     [%
906         \ifBKM@open
907             \ifnum\BKM@level<%
908                 \expandafter\@firstofone\expandafter
909                 {\number\BKM@openlevel} %
910             \else
911                 -%
912             \fi
913         \else
914             -%
915         \fi
916     ] %
917     \BKM@abslevel
918 <<%
919     /Title(\BKM@title)%
920     \ifx\BKM@color\@empty

```

```

921         \else
922         /C[\BKM@color]%
923         \fi
924         \ifnum\BKM@FLAGS>\z@
925         /F \BKM@FLAGS
926         \fi
927         \BKM@action
928         >>%
929     }%
930 \endgroup
931 \fi
932 }

\BKM@getx
933 \def\BKM@getx#1#2#3{%
934     \def\BKM@x@parent{#1}%
935     \def\BKM@x@level{#2}%
936     \def\BKM@x@abslevel{#3}%
937 }

938 </dvipdfm>

3.3 Driver for VTeX

939 <*vtex>
940 \NeedsTeXFormat{LaTeX2e}
941 \ProvidesFile{bkm-vtex.def}%
942 [2023-12-10 v1.31 bookmark driver for VTeX (HO)]%

943 \ifvtexpdf
944 \else
945     \PackageWarningNoLine{bookmark}{%
946         The VTeX driver only supports PDF mode%
947     }%
948 \fi

\BKM@id
949 \newcount\BKM@id
950 \BKM@id=\z@

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

\ifBKM@sw
952 \newif\ifBKM@sw

\bookmark
953 \newcommand*{\bookmark}[2][1]{%
954     \if@filesw
955         \begingroup
956         \def\bookmark@text{#2}%
957         \BKM@setup{#1}%
958         \edef\BKM@prev{\the\BKM@id}%
959         \global\advance\BKM@id\@ne
960         \BKM@swtrue
961         \@whiles\ifBKM@sw\fi{%
962             \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
963             \BKM@startatrootfalse
964             \def\BKM@parent{0}%
965             \expandafter\edef\csname BKM@\the\BKM@id\endcsname{%
966                 0\BKM@level}%
967             }%
968             \BKM@swfalse

```

```

969     \else
970     \expandafter\expandafter\expandafter\BKM@getx
971     \csname BKM@\BKM@prev\endcsname
972     \ifnum\BKM@level>\BKM@x@level\relax
973     \let\BKM@parent\BKM@prev
974     \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
975     {\BKM@prev}}{\BKM@level}%
976     }%
977     \BKM@swfalse
978     \else
979     \let\BKM@prev\BKM@x@parent
980     \fi
981   \fi
982 }%
983 \pdfstringdef\BKM@title{\bookmark@text}%
984 \BKM@vtx@title
985 \edef\BKM@FLAGS{\BKM@PrintStyle}%
986 \let\BKM@action\@empty
987 \ifx\BKM@goto\@empty
988   \ifx\BKM@dest\@empty
989     \ifx\BKM@named\@empty
990       \ifx\BKM@rawaction\@empty
991         \ifx\BKM@uri\@empty
992           \ifx\BKM@page\@empty
993             \PackageError{bookmark}{Missing action}\@ehc
994             \def\BKM@action{!}%
995           \else
996             \edef\BKM@action{!\BKM@page}%
997           \fi
998         \else
999           \BKM@EscapeString\BKM@uri
1000           \edef\BKM@action{%
1001             <u=%
1002             /S/URI%
1003             /URI(\BKM@uri)%
1004             >%
1005             }%
1006         \fi
1007       \else
1008         \edef\BKM@action{<u=\BKM@rawaction>}%
1009       \fi
1010     \else
1011       \BKM@EscapeName\BKM@named
1012       \edef\BKM@action{%
1013         <u=%
1014         /S/Named%
1015         /N/\BKM@named
1016         >%
1017         }%
1018       \fi
1019     \else
1020       \BKM@EscapeString\BKM@dest
1021       \edef\BKM@action{\BKM@dest}%
1022     \fi
1023   \else
1024     \ifx\BKM@dest\@empty
1025       \ifx\BKM@page\@empty
1026         \def\BKM@page{1}%
1027       \fi
1028       \ifx\BKM@view\@empty
1029         \def\BKM@view{Fit}%
1030       \fi

```

```

1031         \edef\BKM@action{/D[\BKM@page/\BKM@view]]}%
1032     \else
1033         \BKM@EscapeString\BKM@dest
1034         \edef\BKM@action{/D(\BKM@dest)]}%
1035     \fi
1036     \BKM@EscapeString\BKM@goto
1037     \edef\BKM@action{%
1038         <u=%
1039             /S/GoToR%
1040             /F(\BKM@goto)%
1041             \BKM@action
1042         >>%
1043     }%
1044 \fi
1045 \ifx\BKM@color\@empty
1046     \let\BKM@RGBcolor\@empty
1047 \else
1048     \expandafter\BKM@toRGB\BKM@color\@nil
1049 \fi
1050 \special{%
1051     !outline \BKM@action;%
1052     p=\BKM@parent,%
1053     i=\number\BKM@id,%
1054     s=%
1055         \ifBKM@open
1056             \ifnum\BKM@level<\BKM@openlevel
1057                 o%
1058             \else
1059                 c%
1060             \fi
1061         \else
1062             c%
1063         \fi,%
1064     \ifx\BKM@RGBcolor\@empty
1065     \else
1066         c=\BKM@RGBcolor,%
1067     \fi
1068     \ifnum\BKM@FLAGS>\z@
1069         f=\BKM@FLAGS,%
1070     \fi
1071     t=\BKM@title
1072 }%
1073 \endgroup
1074 \fi
1075 }

```

\BKM@getx

```

1076 \def\BKM@getx#1#2{%
1077     \def\BKM@x@parent{#1}%
1078     \def\BKM@x@level{#2}%
1079 }

```

\BKM@toRGB

```

1080 \def\BKM@toRGB#1 #2 #3\@nil{%
1081     \let\BKM@RGBcolor\@empty
1082     \BKM@toRGBComponent{#1}%
1083     \BKM@toRGBComponent{#2}%
1084     \BKM@toRGBComponent{#3}%
1085 }

```

\BKM@toRGBComponent

```

1086 \def\BKM@toRGBComponent#1{%

```

```

1087 \dimen@=#1pt\relax
1088 \ifdim\dimen@>\z@
1089   \ifdim\dimen@<\p@
1090     \dimen@=255\dimen@
1091     \advance\dimen@ by 32768sp\relax
1092     \divide\dimen@ by 65536\relax
1093     \dimen@ii=\dimen@
1094     \divide\dimen@ii by 16\relax
1095     \edef\BKM@RGBcolor{%
1096       \BKM@RGBcolor
1097       \BKM@toHexDigit\dimen@ii
1098     }%
1099     \dimen@ii=16\dimen@ii
1100     \advance\dimen@-\dimen@ii
1101     \edef\BKM@RGBcolor{%
1102       \BKM@RGBcolor
1103       \BKM@toHexDigit\dimen@
1104     }%
1105   \else
1106     \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
1107   \fi
1108 \else
1109   \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
1110 \fi
1111 }

```

\BKM@toHexDigit

```

1112 \def\BKM@toHexDigit#1{%
1113   \ifcase\expandafter\@firstofone\expandafter{\number#1} %
1114     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or
1115     8\or 9\or A\or B\or C\or D\or E\or F%
1116   \fi
1117 }

1118 \begingroup
1119 \catcode`\|=0 %
1120 \catcode`\|=12 %

```

\BKM@vtex@title

```

1121 |gdef|BKM@vtex@title{%
1122   |@onelevel@sanitize|BKM@title
1123   |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
1124   |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
1125   |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
1126   |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
1127   |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
1128   |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
1129 }%

```

\BKM@vtex@leftparen

```

1130 |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
1131   #1%
1132   |ifx||#2| |%
1133   |else
1134     (%
1135     |BKM@ReturnAfterFi{%
1136     |BKM@vtex@leftparen#2|@nil
1137     }%
1138   |fi
1139 }%

```

\BKM@vtex@rightparen

```

1140 |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
1141 #1%
1142 |ifx||#2| |%
1143 |else
1144 )%
1145 |BKM@ReturnAfterFi{%
1146 |BKM@vtex@rightparen#2|@nil
1147 }%
1148 |fi
1149 }%

\BKM@vtex@zero
1150 |gdef|BKM@vtex@zero#1\0#2|@nil{%
1151 #1%
1152 |ifx||#2| |%
1153 |else
1154 |noexpand|hv@pdf@char0%
1155 |BKM@ReturnAfterFi{%
1156 |BKM@vtex@zero#2|@nil
1157 }%
1158 |fi
1159 }%

\BKM@vtex@one
1160 |gdef|BKM@vtex@one#1\1#2|@nil{%
1161 #1%
1162 |ifx||#2| |%
1163 |else
1164 |noexpand|hv@pdf@char1%
1165 |BKM@ReturnAfterFi{%
1166 |BKM@vtex@one#2|@nil
1167 }%
1168 |fi
1169 }%

\BKM@vtex@two
1170 |gdef|BKM@vtex@two#1\2#2|@nil{%
1171 #1%
1172 |ifx||#2| |%
1173 |else
1174 |noexpand|hv@pdf@char2%
1175 |BKM@ReturnAfterFi{%
1176 |BKM@vtex@two#2|@nil
1177 }%
1178 |fi
1179 }%

\BKM@vtex@three
1180 |gdef|BKM@vtex@three#1\3#2|@nil{%
1181 #1%
1182 |ifx||#2| |%
1183 |else
1184 |noexpand|hv@pdf@char3%
1185 |BKM@ReturnAfterFi{%
1186 |BKM@vtex@three#2|@nil
1187 }%
1188 |fi
1189 }%

1190 |endgroup
1191 </vtex>

```

3.4 Driver for pdfTeX

```

1192 <*pdfTeX>
1193 \NeedsTeXFormat{LaTeX2e}
1194 \ProvidesFile{bkm-pdfTeX.def}%
1195 [2023-12-10 v1.31 bookmark driver for pdfTeX and luaTeX (H0)]%

\BKM@D0@entry

1196 \def\BKM@D0@entry#1#2{%
1197   \begingroup
1198     \kvsetkeys{BKM@D0}{#1}%
1199     \def\BKM@D0@title{#2}%
1200     \ifx\BKM@D0@srcfile\@empty
1201       \else
1202         \BKM@UnescapeHex\BKM@D0@srcfile
1203       \fi
1204       \BKM@UnescapeHex\BKM@D0@title
1205       \expandafter\expandafter\expandafter\BKM@getx
1206         \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1207       \let\BKM@attr\@empty
1208       \ifx\BKM@D0@flags\@empty
1209       \else
1210         \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1211       \fi
1212       \ifx\BKM@D0@color\@empty
1213       \else
1214         \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1215       \fi
1216       \ifx\BKM@attr\@empty
1217       \else
1218         \edef\BKM@attr{attr{\BKM@attr}}%
1219       \fi
1220       \let\BKM@action\@empty
1221       \ifx\BKM@D0@goto\@empty
1222       \ifx\BKM@D0@dest\@empty
1223       \ifx\BKM@D0@named\@empty
1224       \ifx\BKM@D0@rawaction\@empty
1225       \ifx\BKM@D0@uri\@empty
1226       \ifx\BKM@D0@page\@empty
1227         \PackageError{bookmark}{%
1228           Missing action\BKM@SourceLocation
1229         }\@ehc
1230         \edef\BKM@action{goto page1{/Fit}}%
1231       \else
1232       \ifx\BKM@D0@view\@empty
1233       \def\BKM@D0@view{Fit}%
1234       \fi
1235       \edef\BKM@action{goto page\BKM@D0@page{/ \BKM@D0@view}}%
1236     \fi
1237   \else
1238     \BKM@UnescapeHex\BKM@D0@uri
1239     \BKM@EscapeString\BKM@D0@uri
1240     \edef\BKM@action{user{<</S/URI/URI(\BKM@D0@uri)>>}}%
1241   \fi
1242 \else
1243   \BKM@UnescapeHex\BKM@D0@rawaction
1244   \edef\BKM@action{%
1245     user{%
1246       <<%
1247         \BKM@D0@rawaction
1248       >>%
1249     }%
1250   }%

```

```

1251         \fi
1252     \else
1253         \BKM@EscapeName\BKM@DO@named
1254         \edef\BKM@action{%
1255             user{<</S/Named/N/\BKM@DO@named>>}%
1256         }%
1257     \fi
1258 \else
1259     \BKM@UnescapeHex\BKM@DO@dest
1260     \BKM@DefGotoNameAction\BKM@action\BKM@DO@dest
1261 \fi
1262 \else
1263     \ifx\BKM@DO@dest\@empty
1264     \ifx\BKM@DO@page\@empty
1265         \def\BKM@DO@page{0}%
1266     \else
1267         \BKM@CalcExpr\BKM@DO@page\BKM@DO@page-1%
1268     \fi
1269     \ifx\BKM@DO@view\@empty
1270         \def\BKM@DO@view{Fit}%
1271     \fi
1272     \edef\BKM@action{/D[\BKM@DO@page/\BKM@DO@view]}%
1273 \else
1274     \BKM@UnescapeHex\BKM@DO@dest
1275     \BKM@EscapeString\BKM@DO@dest
1276     \edef\BKM@action{/D(\BKM@DO@dest)}%
1277 \fi
1278 \BKM@UnescapeHex\BKM@DO@gotor
1279 \BKM@EscapeString\BKM@DO@gotor
1280 \edef\BKM@action{%
1281     user{%
1282         <<%
1283         /S/GoToR%
1284         /F(\BKM@DO@gotor)%
1285         \BKM@action
1286         >>%
1287     }%
1288 }%
1289 \fi
1290 \pdfoutline\BKM@attr\BKM@action
1291     count\ifBKM@DO@open\else-\fi\BKM@x@childs
1292     {\BKM@DO@title}%
1293 \endgroup
1294 }

```

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

```

1295 \def\BKM@DefGotoNameAction#1#2{%
1296     \BKM@EscapeString\BKM@DO@dest
1297     \edef#1{goto name{#2}}%
1298 }

```

If tagging is active we use also structure destinations. If hypdestopt is actually used this will be overwritten again.

```

1299 \ExplSyntaxOn
1300 \IfDocumentMetadataTF
1301 {
1302     \tag_if_active:T
1303     {
1304         \def\BKM@DefGotoNameAction#1#2
1305         {
1306             \BKM@EscapeString\BKM@DO@dest
1307             \edef#1{goto~struct~name~{#2}~name~{#2}}%
1308         }

```

```

1309     }
1310   }{}
1311   \ExplSyntaxOff

1312 </pdftex>
1313 <{*pdftex | pdfmark>

```

`\BKM@SourceLocation`

```

1314 \def\BKM@SourceLocation{%
1315   \ifx\BKM@DO@srcfile\@empty
1316     \ifx\BKM@DO@srcline\@empty
1317       \else
1318         .\MessageBreak
1319         Source: line \BKM@DO@srcline
1320       \fi
1321     \else
1322       \ifx\BKM@DO@srcline\@empty
1323         .\MessageBreak
1324         Source: file ` \BKM@DO@srcfile'%
1325       \else
1326         .\MessageBreak
1327         Source: file ` \BKM@DO@srcfile', line \BKM@DO@srcline
1328       \fi
1329     \fi
1330 }

1331 </pdftex | pdfmark>

```

3.5 Drivers with pdfmark specials

3.5.1 Driver dvips

The dvips driver uses PSfile to include the bookmark to resolve a clash with pgf, see <https://github.com/pgf-tikz/pgf/issues/944#issuecomment-723099952>

```

1332 <{*dvips>
1333 \NeedsTeXFormat{LaTeX2e}
1334 \ProvidesFile{bkm-dvips.def}%
1335 [2023-12-10 v1.31 bookmark driver for dvips (H0)]%

```

`\BKM@PSHeaderFile`

```

1336 \def\BKM@PSHeaderFile#1{%
1337   \special{PSfile=#1}%
1338 }

```

`\BKM@filename`

```

1339 \def\BKM@filename{\jobname.out.ps}

1340 \AddToHook{shipout/lastpage}{%
1341   \BKM@pdfmark@out
1342   \BKM@PSHeaderFile\BKM@filename
1343 }

1344 </dvips>

```

3.5.2 Common part

```

1345 <{*pdfmark>

```

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

```

1346 \def\BKM@pdfmark@out{%
1347   \if@files
1348     \newwrite\BKM@file

```

```

1349 \immediate\openout\BKM@file=\BKM@filename\relax
1350 \BKM@write{\@percentchar!}%
1351 \BKM@write{/pdfmark where{pop}}%
1352 \BKM@write{%
1353   {%
1354     /globaldict where{pop globaldict}{userdict}ifelse%
1355     /pdfmark/cleartomark load put%
1356   }%
1357 }%
1358 \BKM@write{ifelse}%
1359 \else
1360 \let\BKM@write\@gobble
1361 \let\BKM@D0@entry\@gobbletwo
1362 \fi
1363 }

```

\BKM@write

```

1364 \def\BKM@write#1{%
1365 \immediate\write\BKM@file
1366 }

```

\BKM@D0@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.

```

1367 \def\BKM@D0@entry#1#2{%
1368 \begingroup
1369 \kvsetkeys{BKM@D0}{#1}%
1370 \ifx\BKM@D0@srcfile\@empty
1371 \else
1372 \BKM@UnescapeHex\BKM@D0@srcfile
1373 \fi
1374 \def\BKM@D0@title{#2}%
1375 \BKM@UnescapeHex\BKM@D0@title
1376 \expandafter\expandafter\expandafter\BKM@getx
1377 \csname BKM@\BKM@D0@id\endcsname\@empty\@empty
1378 \let\BKM@attr\@empty
1379 \ifx\BKM@D0@flags\@empty
1380 \else
1381 \edef\BKM@attr{\BKM@attr/F \BKM@D0@flags}%
1382 \fi
1383 \ifx\BKM@D0@color\@empty
1384 \else
1385 \edef\BKM@attr{\BKM@attr/C[\BKM@D0@color]}%
1386 \fi
1387 \let\BKM@action\@empty
1388 \ifx\BKM@D0@goto\@empty
1389 \ifx\BKM@D0@dest\@empty
1390 \ifx\BKM@D0@named\@empty
1391 \ifx\BKM@D0@rawaction\@empty
1392 \ifx\BKM@D0@uri\@empty
1393 \ifx\BKM@D0@page\@empty
1394 \PackageError{bookmark}{%
1395 Missing action\BKM@SourceLocation
1396 }{\@ehc}
1397 \edef\BKM@action{%
1398 /Action/GoTo%
1399 /Page 1%
1400 /View[/Fit]%
1401 }%
1402 \else
1403 \ifx\BKM@D0@view\@empty
1404 \def\BKM@D0@view{Fit}%

```

```

1405         \fi
1406         \edef\BKM@action{%
1407             /Action/GoTo%
1408             /Page \BKM@DO@page
1409             /View[/\BKM@DO@view]%
1410         }%
1411     \fi
1412 \else
1413     \BKM@UnescapeHex\BKM@DO@uri
1414     \BKM@EscapeString\BKM@DO@uri
1415     \edef\BKM@action{%
1416         /Action<<%
1417         /Subtype/URI%
1418         /URI(\BKM@DO@uri)%
1419     >>%
1420     }%
1421 \fi
1422 \else
1423     \BKM@UnescapeHex\BKM@DO@rawaction
1424     \edef\BKM@action{%
1425         /Action<<%
1426         \BKM@DO@rawaction
1427     >>%
1428     }%
1429 \fi
1430 \else
1431     \BKM@EscapeName\BKM@DO@named
1432     \edef\BKM@action{%
1433         /Action<<%
1434         /Subtype/Named%
1435         /N/\BKM@DO@named
1436     >>%
1437     }%
1438 \fi
1439 \else
1440     \BKM@UnescapeHex\BKM@DO@dest
1441     \BKM@EscapeString\BKM@DO@dest
1442     \edef\BKM@action{%
1443         /Action/GoTo%
1444         /Dest(\BKM@DO@dest)cvn%
1445     }%
1446 \fi
1447 \else
1448     \ifx\BKM@DO@dest\@empty
1449         \ifx\BKM@DO@page\@empty
1450             \def\BKM@DO@page{1}%
1451         \fi
1452         \ifx\BKM@DO@view\@empty
1453             \def\BKM@DO@view{Fit}%
1454         \fi
1455         \edef\BKM@action{%
1456             /Page \BKM@DO@page
1457             /View[/\BKM@DO@view]%
1458         }%
1459     \else
1460         \BKM@UnescapeHex\BKM@DO@dest
1461         \BKM@EscapeString\BKM@DO@dest
1462         \edef\BKM@action{%
1463             /Dest(\BKM@DO@dest)cvn%
1464         }%
1465     \fi
1466     \BKM@UnescapeHex\BKM@DO@gotor

```

```

1467 \BKM@EscapeString\BKM@DO@gotor
1468 \edef\BKM@action{%
1469 /Action/GoToR%
1470 /File(\BKM@DO@gotor)%
1471 \BKM@action
1472 }%
1473 \fi
1474 \BKM@write{[]}%
1475 \BKM@write{/Title(\BKM@DO@title)}%
1476 \ifnum\BKM@x@chilids>\z@
1477 \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@chilids}%
1478 \fi
1479 \ifx\BKM@attr\@empty
1480 \else
1481 \BKM@write{\BKM@attr}%
1482 \fi
1483 \BKM@write{\BKM@action}%
1484 \BKM@write{/OUT pdfmark}%
1485 \endgroup
1486 }
1487 </pdfmark>

```

3.6 Common part for pdftex and pdfmark

1488 < *pdftex | pdfmark >

3.6.1 Write auxiliary file

```

1489 \AddToHook{begindocument}{%
1490 \immediate\write\@mainaux{\string\providecommand\string\BKM@entry[2]{}}}
\BKM@id
1491 \newcount\BKM@id
1492 \BKM@id=\z@
\BKM@0
1493 \@namedef{BKM@0}{000}
\ifBKM@sw
1494 \newif\ifBKM@sw
\bookmark
1495 \newcommand*{\bookmark}[2][1]{%
1496 \if@filesw
1497 \begingroup
1498 \BKM@InitSourceLocation
1499 \def\bookmark@text{#2}%
1500 \BKM@setup{#1}%
1501 \ifx\BKM@srcfile\@empty
1502 \else
1503 \BKM@EscapeHex\BKM@srcfile
1504 \fi
1505 \edef\BKM@prev{\the\BKM@id}%
1506 \global\advance\BKM@id\@ne
1507 \BKM@swtrue
1508 \@whilesw\ifBKM@sw\fi{%
1509 \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
1510 \BKM@startatrootfalse
1511 \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1512 0{\BKM@level}0%
1513 }%
1514 \BKM@swfalse

```

```

1515         \else
1516         \expandafter\expandafter\expandafter\BKM@getx
1517             \csname BKM@\BKM@prev\endcsname
1518         \ifnum\BKM@level>\BKM@x@level\relax
1519             \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
1520                 {\BKM@prev}{\BKM@level}0%
1521             }%
1522             \ifnum\BKM@prev>\z@
1523                 \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
1524                 \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
1525                     {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
1526                 }%
1527             \fi
1528             \BKM@swfalse
1529         \else
1530             \let\BKM@prev\BKM@x@parent
1531         \fi
1532     \fi
1533 }%
1534 \pdfstringdef\BKM@title{\bookmark@text}%
1535 \edef\BKM@FLAGS{\BKM@PrintStyle}%
1536 \csname BKM@HypDestOptHook\endcsname
1537 \BKM@EscapeHex\BKM@dest
1538 \BKM@EscapeHex\BKM@uri
1539 \BKM@EscapeHex\BKM@gotor
1540 \BKM@EscapeHex\BKM@rawaction
1541 \BKM@EscapeHex\BKM@title
1542 \immediate\write\@mainaux{%
1543     \string\BKM@entry{%
1544         id=\number\BKM@id
1545         \ifBKM@open
1546             \ifnum\BKM@level<\BKM@openlevel
1547                 ,open%
1548             \fi
1549         \fi
1550         \BKM@auxentry{dest}%
1551         \BKM@auxentry{named}%
1552         \BKM@auxentry{uri}%
1553         \BKM@auxentry{gotor}%
1554         \BKM@auxentry{page}%
1555         \BKM@auxentry{view}%
1556         \BKM@auxentry{rawaction}%
1557         \BKM@auxentry{color}%
1558         \ifnum\BKM@FLAGS>\z@
1559             ,flags=\BKM@FLAGS
1560         \fi
1561         \BKM@auxentry{srcline}%
1562         \BKM@auxentry{srcfile}%
1563     }{\BKM@title}%
1564 }%
1565 \endgroup
1566 \fi
1567 }

\BKM@getx
1568 \def\BKM@getx#1#2#3{%
1569     \def\BKM@x@parent{#1}%
1570     \def\BKM@x@level{#2}%
1571     \def\BKM@x@childs{#3}%
1572 }

\BKM@auxentry

```

```

1573 \def\BKM@auxentry#1{%
1574   \expandafter\ifx\csname BKM@#1\endcsname\@empty
1575   \else
1576     ,#1={\csname BKM@#1\endcsname}%
1577   \fi
1578 }

```

\BKM@InitSourceLocation

```

1579 \def\BKM@InitSourceLocation{%
1580   \edef\BKM@srcline{\the\inputlineno}%
1581   \BKM@LuaTeX@InitFile
1582   \ifx\BKM@srcfile\@empty
1583     \@ifundefined{currfilepath}{\}%
1584     \edef\BKM@srcfile{\currfilepath}%
1585   }%
1586   \fi
1587 }

```

\BKM@LuaTeX@InitFile

```

1588 \ifluatex
1589   \def\BKM@LuaTeX@InitFile{%
1590     \begingroup
1591     \toks@={}%
1592     \edef\x{\endgroup
1593       \def\noexpand\BKM@srcfile{%
1594         \the\expandafter\toks@
1595         \directlua{%
1596           if status and status.filename then %
1597             tex.settoks('toks@', status.filename)%
1598           end%
1599         }}%
1600     }%
1601   }\x
1602 }%
1603 \else
1604   \let\BKM@LuaTeX@InitFile\relax
1605 \fi

```

3.6.2 Read auxiliary data

```

1606 \SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
1607 \DeclareStringOption[0]{id}
1608 \DeclareBoolOption{open}
1609 \DeclareStringOption{flags}
1610 \DeclareStringOption{color}
1611 \DeclareStringOption{dest}
1612 \DeclareStringOption{named}
1613 \DeclareStringOption{uri}
1614 \DeclareStringOption{goto}
1615 \DeclareStringOption{page}
1616 \DeclareStringOption{view}
1617 \DeclareStringOption{rawaction}
1618 \DeclareStringOption{srcline}
1619 \DeclareStringOption{srcfile}

1620 \AtBeginDocument{%
1621   \let\BKM@entry\BKM@DO@entry
1622 }

1623 </pdfTeX | pdfmark>

```

3.7 Option attend

3.7.1 Hook

```

1624 <*package>
1625 \ifBKM@atend
1626 \else
\BookmarkAtEnd This is a dummy definition that generates a warning if option atend has not been
given.
1627 \newcommand{\BookmarkAtEnd}[1]{%
1628   \PackageWarning{bookmark}{%
1629     Ignored, because option `atend' is missing%
1630   }%
1631 }%

1632 \expandafter\endinput
1633 \fi

\BookmarkAtEnd
1634 \newcommand*{\BookmarkAtEnd}{%
1635   \g@addto@macro\BKM@EndHook
1636 }

1637 \let\BKM@EndHook\@empty
1638 </package>

```

3.7.2 Drivers using hooks at end of document

Driver `pdftex` use the LaTeX hook `enddocument/afterlastpage` (which is equivalent to the previously used `\AfterLastShipout` of `atveryend`'s), because it still needs the `.aux` file. It uses `\pdfoutline` for the bookmarks that can be used after the last page.

- Driver `pdftex` uses `\pdfoutline` that can be used after the last page.

```

1639 <*pdftex>
1640 \ifBKM@atend
1641   \AddToHook{enddocument/afterlastpage}{%
1642     \BKM@EndHook
1643   }%
1644 \fi
1645 </pdftex>

```

3.7.3 Drivers using `shipout/lastpage`

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 the LaTeX hook `shipout/lastpage`. At least two L^AT_EX runs are necessary. The postscript driver `dvips` use an external PostScript file for the bookmarks. The file writing has been moved to the the last shipout page too to avoid conflicts with `pgf`.

```

1646 <*dvipdfm | vtex | pdfmark>
1647 \ifBKM@atend
1648   \AddToHook{shipout/lastpage}{\BKM@EndHook}%
1649 \fi
1650 </dvipdfm | vtex | pdfmark>

```

4 Installation

4.1 Download

Package. This package is available on CTAN¹:

¹CTAN:pkg/bookmark

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

[CTAN:macros/latex/contrib/bookmark/bookmark.ins](#) Installation driver.

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

4.2 Package installation

The easiest is to use the package manager from your TeX system. If you want to install manually:

Unpacking. The `.dtx` file is `docstrip` archive. The files are extracted from the `.dtx` by compiling the file with some TeX program.

```
pdflatex 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-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>bkm-dvipdfm-2019-12-03.def</code>	<code>→ tex/latex/bookmark/bkm-dvipdfm-2019-12-03.def</code>
<code>bkm-dvips-2019-12-03.def</code>	<code>→ tex/latex/bookmark/bkm-dvips-2019-12-03.def</code>
<code>bkm-pdftex-2019-12-03.def</code>	<code>→ tex/latex/bookmark/bkm-pdftex-2019-12-03.def</code>
<code>bkm-vtex-2019-12-03.def</code>	<code>→ tex/latex/bookmark/bkm-vtex-2019-12-03.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`.

4.3 Refresh file name databases

If your TeX distribution (TeX Live, MiKTeX, ...) relies on file name databases, you must refresh these. For example, TeX Live users run `texhash` or `mktextlsr`.

Generating the documentation. You can use the `.dtx` 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 pdfLaTeX:

```
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 Rahtz, 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-`pdfTeX` users.

[2007/02/21 v0.3]

- Dependency from `pdfTeX` 1.30 removed by using package `pdfescape`.

[2007/02/22 v0.4]

- `hyperref`'s `bookmarkstyle` respected.

[2007/03/02 v0.5]

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

[2007/03/03 v0.6]

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

[2007/03/07 v0.7]

- Dependency from `ε-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 ε -TeX.
- Hook for package `hypdestopt` added.

[2008/09/13 v1.4]

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

[2009/08/13 v1.5]

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

[2009/12/06 v1.6]

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

[2009/12/07 v1.7]

- Use of package `atveryend` fixed.

[2009/12/17 v1.8]

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

[2010/03/30 v1.9]

- Package name in an error message fixed.

[2010/04/03 v1.10]

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

[2010/04/04 v1.11]

- Bug fix (introduced in v1.10).

[2010/04/08 v1.12]

- Requires `ltxcmds` 2010/04/08.

[2010/07/23 v1.13]

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

[2010/09/02 v1.14]

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

[2010/09/25 v1.15]

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

[2010/10/19 v1.16]

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

[2010/10/25 v1.17]

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

[2010/11/05 v1.18]

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

[2011/03/20 v1.19]

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

[2011/04/13 v1.20]

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

[2011/04/21 v1.21]

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

[2011/05/13 v1.22]

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

[2011/09/19 v1.23]

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

[2011/12/02 v1.24]

- Small optimization in `\BKM@toHexDigit`.

[2016/05/16 v1.25]

- Documentation updates.

[2016/05/17 v1.26]

- define `\pdfoutline` 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`).

[2020-11-06 v1.29]

- Adapted the dvips to avoid a clash with pgf.
<https://github.com/pgf-tikz/pgf/issues/944>
- All drivers now use the new LaTeX hooks and so require a format 2020-10-01 or newer.
- Added support for `destlabel` option of `hyperref`,
<https://github.com/ho-tex/bookmark/issues/1>
- Removed the `dvipsone` and `textures` driver.
- Removed the code for option `dvipdfmx-outline-open` and `\SpecialDvipdfmxOutlineOpen`. All dvipdfmx version should now support this out-of-the-box.

[2023-12-05 v1.30]

- Corrected support for option `bookmarkstype` of `hyperref`,
<https://github.com/ho-tex/bookmark/issues/4>
- Added support for structure destinations,
<https://github.com/ho-tex/bookmark/issues/7>

[2023-12-10 v1.31]

- Simplified the `.dtx`. It is no longer a self-extracting archive instead the newly added `.ins` should be used for installation.
<https://github.com/ho-tex/bookmark/issues/7>
- Removed the now outdated frozen drivers.
- Removed the dependency to `ltxcmds`.

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	<code>\(</code>	1123 , 1130
<code>\"</code>	33 <code>\)</code>	1124 , 1140

\@bookmarksopenlevel	207	\BKM@@CheckRect	448, 450
\@car	221, 261, 415, 429	\BKM@@CheckXYZ	489, 491
\@ehc	377, 419, 580, 701, 730, 740, 843, 993, 1229, 1396	\BKM@@page	383
\@empty	120, 126, 132, 176, 191, 216, 357, 372, 382, 387, 436, 453, 461, 469, 477, 495, 507, 517, 527, 836, 837, 838, 839, 840, 841, 842, 846, 880, 881, 886, 920, 986, 987, 988, 989, 990, 991, 992, 1024, 1025, 1028, 1045, 1046, 1064, 1081, 1200, 1206, 1207, 1208, 1212, 1216, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1232, 1263, 1264, 1269, 1315, 1316, 1322, 1370, 1377, 1378, 1379, 1383, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1403, 1448, 1449, 1452, 1479, 1501, 1574, 1582, 1637	\BKM@abslevel	812, 816, 823, 825, 917
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\@gobble	431, 581, 668, 669, 671, 772, 773, 774, 775, 1360	\BKM@attr	1207, 1210, 1214, 1216, 1218, 1290, 1378, 1381, 1385, 1479, 1481
\@gobbletwo	600, 670, 674, 675, 676, 680, 1361	\BKM@auxentry	1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1561, 1562, 1573
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\	1119	\BKM@DefGotoNameAction	680, 1260, 1295
Numbers		\BKM@DefineDriverKey	625, 634, 635, 636, 637, 638, 639
\0	1125, 1150	\BKM@depth	210, 212, 217, 234, 237, 243, 761
\1	1126, 1160	\BKM@dest	798, 838, 870, 874, 880, 891, 892, 988, 1020, 1021, 1024, 1033, 1034, 1537
\2	1127, 1170	\BKM@DisableOptions	196, 549, 629, 665
\3	1128, 1180	\BKM@DO@color	1212, 1214, 1383, 1385
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