The bookmark package

Heiko Oberdiek*

2023-12-05 v1.30

Abstract

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

Contents

1 Documentation **3**
- 1.1 Introduction . . . 3
- 1.2 Options . . . 3
  - 1.2.1 Options draft and final . . . 3
  - 1.2.2 Driver options . . . 4
  - 1.2.3 Layout options . . . 4
  - 1.2.4 Action options . . . 4
  - 1.2.5 Level options . . . 5
  - 1.2.6 Style definitions . . . 6
  - 1.2.7 Hook support . . . 6
- 1.3 Compatibility with hyperref . . . 7
- 1.4 Adding bookmarks at the end . . . 7
- 1.5 Structure destinations . . . 8
- 1.6 Limitations/ToDos . . . 8

2 Example **8**

3 Implementation **10**
- 3.1 Package . . . 10
  - 3.1.1 Requirements . . . 10
  - 3.1.2 Package options . . . 11
  - 3.1.3 Action options . . . 15
  - 3.1.4 Option atend . . . 19
  - 3.1.5 Option style . . . 19
  - 3.1.6 Options for source file location . . . 20
  - 3.1.7 Hook support . . . 21
  - 3.1.8 Driver setup and loading . . . 21
  - 3.1.9 Compatibility for hyperref . . . 23
- 3.2 Driver for dvipdfm . . . 24
- 3.3 Driver for VTEX . . . 27
- 3.4 Driver for pdfTEX . . . 31
- 3.5 Drivers with pdfmark specials . . . 34
  - 3.5.1 Driver dvips . . . 34
  - 3.5.2 Common part . . . 34
- 3.6 Common part for pdftex and pdfmark . . . 37

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

3.6.1 Write auxiliary file . . . 37
3.6.2 Read auxiliary data . . . 39
3.7 Option atend . . . 39
3.7.1 Hook . . . 39
3.7.2 Drivers using hooks at end of document . . . 40
3.7.3 Drivers using shipout/lastpage . . . 40

4 Installation **40**
4.1 Download . . . 40
4.2 Package installation . . . 41
4.3 Refresh file name databases . . . 41
4.4 Some details for the interested . . . 41

5 References **42**

6 History **42**
[2007/02/19 v0.1] . . . 42
[2007/02/20 v0.2] . . . 42
[2007/02/21 v0.3] . . . 42
[2007/02/22 v0.4] . . . 42
[2007/03/02 v0.5] . . . 42
[2007/03/03 v0.6] . . . 42
[2007/03/07 v0.7] . . . 42
[2007/04/09 v0.8] . . . 42
[2007/04/25 v0.9] . . . 43
[2007/05/29 v1.0] . . . 43
[2007/07/13 v1.1] . . . 43
[2007/09/25 v1.2] . . . 43
[2008/08/08 v1.3] . . . 43
[2008/09/13 v1.4] . . . 43
[2009/08/13 v1.5] . . . 43
[2009/12/06 v1.6] . . . 43
[2009/12/07 v1.7] . . . 43
[2009/12/17 v1.8] . . . 43
[2010/03/30 v1.9] . . . 43
[2010/04/03 v1.10] . . . 43
[2010/04/04 v1.11] . . . 44
[2010/04/08 v1.12] . . . 44
[2010/07/23 v1.13] . . . 44
[2010/09/02 v1.14] . . . 44
[2010/09/25 v1.15] . . . 44
[2010/10/19 v1.16] . . . 44
[2010/10/25 v1.17] . . . 44
[2010/11/05 v1.18] . . . 44
[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] . . . 45
[2011/12/02 v1.24] . . . 45
[2016/05/16 v1.25] . . . 45
[2016/05/17 v1.26] . . . 45
[2019/06/04 v1.27] . . . 45
[2019/12/03 v1.28] . . . 45
[2020-11-06 v1.29] . . . 45
[2023-12-05 v1.30] . . . 45

7 Index **45**

1 Documentation

1.1 Introduction

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

- The bookmarks are already generated in the first TEX compile run.
- The font style and color of the bookmarks can be changed.
- More actions than simple GoTo actions are possible.

In the same way as hyperref [1] the bookmarks are generated in the order of the bookmark generating macros (`\bookmark`). A level number is used to define the tree structure of the bookmarks. The restrictions are less strict:

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

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

1.2 Options

Options can be given at four places:

1. `\usepackage[`⟨*options*⟩`]{bookmark}`
   This is the only place for driver options and option atend.
2. `\bookmarksetup{`⟨*options*⟩`}`
   This command is just for setting options.
3. `\bookmarksetupnext{`⟨*options*⟩`}`
   The options are stored and called after the options of the next `\bookmark` command.
4. `\bookmark[`⟨*options*⟩`]{`⟨*title*⟩`}`
   This command sets the bookmark. The option settings remain limited to this bookmark.

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

1.2.1 Options draft and final

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

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

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

1.2.2 Driver options

Supported drivers are pdftex, dvips, dvipdfmx (xetex and older name dvipdfm), and vtex. The TEX engines pdfTEX, XeTEX, and VTEX 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 LATEX-hooks. If an older format than 2020-10-01 is detected frozen versions of the previous drivers are used as fallback.

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

1.2.5 Level options

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

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

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

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

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

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

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

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

1.2.6 Style definitions

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

`\bookmarkdefinestyle` {⟨*name*⟩} {⟨*key value list*⟩}

The ⟨*key value list*⟩ of option settings is assigned the style ⟨*name*⟩.

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

1.2.7 Hook support

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

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

`\bookmarkget` {⟨*option*⟩}

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

bold, italic, open

Other supported options:

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

Additionally the following key is available:

text

It returns the text of the outline entry.

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

1.3 Compatibility with hyperref

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

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

Some options of hyperref are also implemented in package bookmark:

hyperref	bookmark
bookmarksdepth	depth
bookmarksopen	open
bookmarksopenlevel	openlevel
bookmarksnumbered	numbered

The following commands are also available:

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

1.4 Adding bookmarks at the end

Package option atend enables the following macro:

`\BookmarkAtEnd` {⟨*stuff*⟩}

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

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

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

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

Remarks.

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

  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 LaTeX runs are necessary at least, because the last page is detected by a reference.

  dvips uses now the new 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

```
⟨*example⟩
\documentclass{article}
\usepackage{xcolor}[2007/01/21]
\usepackage{hyperref}
\usepackage[
  open,
  openlevel=2,
  atend
]{bookmark}[2019/12/03]

\bookmarksetup{color=blue}

\BookmarkAtEnd{%
  \bookmarksetup{startatroot}%
  \bookmark[named=LastPage, level=0]{End/Last page}%
  \bookmark[named=FirstPage, level=1]{First page}%
}

\begin{document}
\section{First section}
\subsection{Subsection A}
\begin{figure}
  \hypertarget{fig}{}%
  A figure.
```

```
\end{figure}
\bookmark[
  rellevel=1,
  keeplevel,
  dest=fig
]{A figure}
\subsection{Subsection B}
\subsubsection{Subsubsection C}
\subsection{Umlauts: \"A\"O\"U\"a\"o\"u\ss}
\newpage
\bookmarksetup{
  bold,
  color=[rgb]{1,0,0}
}
\section{Very important section}
\bookmarksetup{
  italic,
  bold=false,
  color=blue
}
\subsection{Italic section}
\bookmarksetup{
  italic=false
}
\part{Misc}
\section{Diverse}
\subsubsection{Subsubsection, omitting subsection}
\bookmarksetup{
  startatroot
}
\section{Last section outside part}
\subsection{Subsection}
\bookmarksetup{
  color={}
}
\begingroup
  \bookmarksetup{level=0, color=green!80!black}
  \bookmark[named=FirstPage]{First page}
  \bookmark[named=LastPage]{Last page}
  \bookmark[named=PrevPage]{Previous page}
  \bookmark[named=NextPage]{Next page}
\endgroup
\bookmark[
  page=2,
  view=FitH 800
]{Page 2, FitH 800}
\bookmark[
  page=2,
  view=FitBH \calc{\paperheight-\topmargin-1in-\headheight-\headsep}
]{Page 2, FitBH top of text body}
\bookmark[
  uri={http://www.dante.de/},
  color=magenta
]{Dante homepage}
\bookmark[
  gotor={t.pdf},
  page=1,
  view={XYZ 0 1000 null},
  color=cyan!75!black
]{File t.pdf}
\bookmark[named=FirstPage]{First page}
\bookmark[rellevel=1, named=LastPage]{Last page (rellevel=1)}
```

```
\bookmark[named=PrevPage]{Previous page}
\bookmark[level=0, named=FirstPage]{First page (level=0)}
\bookmark[
  rellevel=1,
  keeplevel,
  named=LastPage
]{Last page (rellevel=1, keeplevel)}
\bookmark[named=PrevPage]{Previous page}
\end{document}
```

⟨/example⟩

3 Implementation

3.1 Package

```
⟨*package⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{bookmark}%
  [2023-12-05 v1.30 PDF bookmarks (HO)]%
```

3.1.1 Requirements

ε-TEX.

\BKM@CalcExpr

```
\begingroup\expandafter\expandafter\expandafter\endgroup
\expandafter\ifx\csname numexpr\endcsname\relax
  \def\BKM@CalcExpr#1#2#3#4{%
    \begingroup
      \count@=#2\relax
      \advance\count@ by#3#4\relax
      \edef\x{\endgroup
        \def\noexpand#1{\the\count@}%
      }%
    \x
  }%
\else
  \def\BKM@CalcExpr#1#2#3#4{%
    \edef#1{%
      \the\numexpr#2#3#4\relax
    }%
  }%
\fi
```

Escape features of pdfTEX.

\BKM@EscapeName

```
\def\BKM@EscapeName#1{%
  \ifx#1\@empty
  \else
    \EdefEscapeName#1#1%
  \fi
}%
```

\BKM@EscapeString

```
\def\BKM@EscapeString#1{%
  \ifx#1\@empty
  \else
    \EdefEscapeString#1#1%
  \fi
}%
```

\BKM@EscapeHex

```
\def\BKM@EscapeHex#1{%
  \ifx#1\@empty
  \else
    \EdefEscapeHex#1#1%
  \fi
}%
```

\BKM@UnescapeHex

```
\def\BKM@UnescapeHex#1{%
  \EdefUnescapeHex#1#1%
}%
```

Packages. Don't load packages loaded by xpackagehyperref

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

3.1.2 Package options

```
\SetupKeyvalOptions{family=BKM,prefix=BKM@}
\DeclareLocalOptions{%
  atend,%
  bold,%
  color,%
  depth,%
  dest,%
  draft,%
  final,%
  gotor,%
  italic,%
  keeplevel,%
  level,%
  named,%
  numbered,%
  open,%
  openlevel,%
  page,%
  rawaction,%
  rellevel,%
  srcfile,%
  srcline,%
  startatroot,%
  uri,%
  view,%
}
```

\bookmarksetup

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

\BKM@setup

```
\def\BKM@setup#1{%
  \bookmarksetup{#1}%
  \ifx\BKM@HookNext\ltx@empty
  \else
    \expandafter\bookmarksetup\expandafter{\BKM@HookNext}%
    \BKM@HookNextClear
  \fi
  \BKM@hook
  \ifBKM@keeplevel
  \else
    \xdef\BKM@currentlevel{\BKM@level}%
  \fi
}
```

```
\bookmarksetupnext
                    \newcommand*{\bookmarksetupnext}[1]{%
                      \ltx@GlobalAppendToMacro\BKM@HookNext{,#1}%
                    }
    \BKM@setupnext
\BKM@HookNextClear
                    \def\BKM@HookNextClear{%
                      \global\let\BKM@HookNext\ltx@empty
                    }
     \BKM@HookNext
                    \BKM@HookNextClear

                    \DeclareBoolOption{draft}
                    \DeclareComplementaryOption{final}{draft}
\BKM@DisableOptions
                    \def\BKM@DisableOptions{%
                      \DisableKeyvalOption[action=warning,package=bookmark]%
                          {BKM}{draft}%
                      \DisableKeyvalOption[action=warning,package=bookmark]%
                          {BKM}{final}%
                    }

                    \DeclareBoolOption[\ifHy@bookmarksopen true\else false\fi]{open}
    \bookmark@open
                    \def\bookmark@open{%
                      \ifBKM@open\ltx@one\else\ltx@zero\fi
                    }

                    \DeclareStringOption[\maxdimen]{openlevel}
    \BKM@openlevel
                    \edef\BKM@openlevel{\number\@bookmarksopenlevel}

                    %\DeclareStringOption[\c@tocdepth]{depth}
                    \ltx@IfUndefined{Hy@bookmarksdepth}{%
                      \def\BKM@depth{\c@tocdepth}%
                    }{%
                      \let\BKM@depth\Hy@bookmarksdepth
                    }
                    \define@key{BKM}{depth}[]{%
                      \edef\BKM@param{#1}%
                      \ifx\BKM@param\@empty
                        \def\BKM@depth{\c@tocdepth}%
                      \else
                        \ltx@IfUndefined{toclevel@\BKM@param}{%
                          \@onelevel@sanitize\BKM@param
                          \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
                          \ifcase 0\expandafter\ifx\BKM@temp-1\fi
                                  \expandafter\ifnum\expandafter`\BKM@temp>47 %
                                    \expandafter\ifnum\expandafter`\BKM@temp<58 %
                                      1%
                                    \fi
                                  \fi
                                  \relax
                            \PackageWarning{bookmark}{%
                              Unknown document division name (\BKM@param)\MessageBreak
                              for option 'depth'%
```

```
        }%
      \else
        \BKM@SetDepthOrLevel\BKM@depth\BKM@param
      \fi
    }{%
      \BKM@SetDepthOrLevel\BKM@depth{%
        \csname toclevel@\BKM@param\endcsname
      }%
    }%
  \fi
}
```

\bookmark@depth

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

\BKM@SetDepthOrLevel

```
\def\BKM@SetDepthOrLevel#1#2{%
  \begingroup
    \setbox\z@=\hbox{%
      \count@=#2\relax
      \expandafter
    }%
  \expandafter\endgroup
  \expandafter\def\expandafter#1\expandafter{\the\count@}%
}

\DeclareStringOption[\BKM@currentlevel]{level}[\BKM@currentlevel]
\define@key{BKM}{level}{%
  \edef\BKM@param{#1}%
  \ifx\BKM@param\BKM@MacroCurrentLevel
    \let\BKM@level\BKM@param
  \else
    \ltx@IfUndefined{toclevel@\BKM@param}{%
      \@onelevel@sanitize\BKM@param
      \edef\BKM@temp{\expandafter\@car\BKM@param\@nil}%
      \ifcase 0\expandafter\ifx\BKM@temp-1\fi
              \expandafter\ifnum\expandafter`\BKM@temp>47 %
                \expandafter\ifnum\expandafter`\BKM@temp<58 %
                  1%
                \fi
              \fi
              \relax
        \PackageWarning{bookmark}{%
          Unknown document division name (\BKM@param)\MessageBreak
          for option `level'%
        }%
      \else
        \BKM@SetDepthOrLevel\BKM@level\BKM@param
      \fi
    }{%
      \BKM@SetDepthOrLevel\BKM@level{%
        \csname toclevel@\BKM@param\endcsname
      }%
    }%
  \fi
}
```

\BKM@MacroCurrentLevel

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

\DeclareBoolOption{keeplevel}
\DeclareBoolOption{startatroot}
```

\BKM@startatrootfalse

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

\BKM@startatroottrue

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

```
\define@key{BKM}{rellevel}{%
  \BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel
}
```

\bookmark@level

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

\BKM@currentlevel

```
\def\BKM@currentlevel{0}
```

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

```
\DeclareBoolOption[%
  \ifHy@bookmarksnumbered true\else false\fi
]{numbered}
\g@addto@macro\BKM@numberedtrue{%
  \let\ifHy@bookmarksnumbered\iftrue
}
\g@addto@macro\BKM@numberedfalse{%
  \let\ifHy@bookmarksnumbered\iffalse
}
\g@addto@macro\Hy@bookmarksnumberedtrue{%
  \let\ifBKM@numbered\iftrue
}
\g@addto@macro\Hy@bookmarksnumberedfalse{%
  \let\ifBKM@numbered\iffalse
}
```

\bookmark@numbered

```
\def\bookmark@numbered{%
  \ifBKM@numbered\ltx@one\else\ltx@zero\fi
}
```

Redefinitions hyperref's options

\BKM@PatchHyperrefOption

```
\def\BKM@PatchHyperrefOption#1{%
  \expandafter\BKM@@PatchHyperrefOption\csname KV@Hyp@#1\endcsname%
}
```

\BKM@@PatchHyperrefOption

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

\BKM@@@PatchHyperrefOption

```
\def\BKM@@@PatchHyperrefOption#1\BKM@nil#2#3{%
  \def#2##1{%
    #1%
    \bookmarksetup{#3={##1}}%
  }%
}
```

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

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

```
\bitsetReset{BKM@FontStyle}%
\define@key{BKM}{italic}[true]{%
  \expandafter\ifx\csname if#1\endcsname\iftrue
    \bitsetSet{BKM@FontStyle}{0}%
  \else
    \bitsetClear{BKM@FontStyle}{0}%
  \fi
}%
\define@key{BKM}{bold}[true]{%
  \expandafter\ifx\csname if#1\endcsname\iftrue
    \bitsetSet{BKM@FontStyle}{1}%
  \else
    \bitsetClear{BKM@FontStyle}{1}%
  \fi
}%
```

`\bookmark@italic`

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

`\bookmark@bold`

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

`\BKM@PrintStyle`

```
\def\BKM@PrintStyle{%
  \bitsetGetDec{BKM@FontStyle}%
}%
```

Options for color.

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

`\BKM@color`

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

`\bookmark@color`

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

3.1.3 Action options

```
\def\BKM@temp#1{%
  \DeclareStringOption{#1}%
  \expandafter\edef\csname bookmark@#1\endcsname{%
    \expandafter\noexpand\csname BKM@#1\endcsname
  }%
}
```

`\bookmark@dest`

```
\BKM@temp{dest}
```

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

      \bookmark@uri
                    \BKM@temp{uri}

    \bookmark@gotor
                    \BKM@temp{gotor}

\bookmark@rawaction
                    \BKM@temp{rawaction}

                    \define@key{BKM}{page}{%
                      \def\BKM@page{#1}%
                      \ifx\BKM@page\@empty
                      \else
                        \edef\BKM@page{\number\BKM@page}%
                        \ifnum\BKM@page>\z@
                        \else
                          \PackageError{bookmark}{Page must be positive}\@ehc
                          \def\BKM@page{1}%
                        \fi
                      \fi
                    }

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

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

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

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

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

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

 \BKM@CheckViewType
                    \def\BKM@CheckViewType#1 #2\@nil{%
                      \def\BKM@type{#1}%
                      \@onelevel@sanitize\BKM@type
                      \BKM@TestViewType{Fit}{}%
                      \BKM@TestViewType{FitB}{}%
                      \BKM@TestViewType{FitH}{%
                        \BKM@CheckParam#2 \@nil{top}%
                      }%
                      \BKM@TestViewType{FitBH}{%
                        \BKM@CheckParam#2 \@nil{top}%
                      }%
                      \BKM@TestViewType{FitV}{%
                        \BKM@CheckParam#2 \@nil{bottom}%
                      }%
                      \BKM@TestViewType{FitBV}{%
```

```
    \BKM@CheckParam#2 \@nil{bottom}%
  }%
  \BKM@TestViewType{FitR}{%
    \BKM@CheckRect{#2}{ }%
  }%
  \BKM@TestViewType{XYZ}{%
    \BKM@CheckXYZ{#2}{ }%
  }%
  \@car{%
    \PackageError{bookmark}{%
      Unknown view type ‘\BKM@type’,\MessageBreak
      using ‘FitH’ instead%
    }\@ehc
    \def\BKM@view{FitH}%
  }%
  \@nil
}
```

\BKM@TestViewType

```
\def\BKM@TestViewType#1{%
  \def\BKM@temp{#1}%
  \@onelevel@sanitize\BKM@temp
  \ifx\BKM@type\BKM@temp
    \let\BKM@view\BKM@temp
    \expandafter\@car
  \else
    \expandafter\@gobble
  \fi
}
```

BKM@CheckParam

```
\def\BKM@CheckParam#1 #2\@nil#3{%
  \def\BKM@param{#1}%
  \ifx\BKM@param\@empty
    \PackageWarning{bookmark}{%
      Missing parameter (#3) for ‘\BKM@type’,\MessageBreak
      using 0%
    }%
    \def\BKM@param{0}%
  \else
    \BKM@CalcParam
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
}
```

BKM@CheckRect

```
\def\BKM@CheckRect#1#2{%
  \BKM@@CheckRect#1#2#2#2#2\@nil
}
```

\BKM@@CheckRect

```
\def\BKM@@CheckRect#1 #2 #3 #4 #5\@nil{%
  \def\BKM@temp{0}%
  \def\BKM@param{#1}%
  \ifx\BKM@param\@empty
    \def\BKM@param{0}%
    \def\BKM@temp{1}%
  \else
    \BKM@CalcParam
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
  \def\BKM@param{#2}%
```

```
  \ifx\BKM@param\@empty
    \def\BKM@param{0}%
    \def\BKM@temp{1}%
  \else
    \BKM@CalcParam
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
  \def\BKM@param{#3}%
  \ifx\BKM@param\@empty
    \def\BKM@param{0}%
    \def\BKM@temp{1}%
  \else
    \BKM@CalcParam
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
  \def\BKM@param{#4}%
  \ifx\BKM@param\@empty
    \def\BKM@param{0}%
    \def\BKM@temp{1}%
  \else
    \BKM@CalcParam
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
  \ifnum\BKM@temp>\z@
    \PackageWarning{bookmark}{Missing parameters for `\BKM@type'}%
  \fi
}
```

\BKM@CheckXYZ

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

\BKM@@CheckXYZ

```
\def\BKM@@CheckXYZ#1 #2 #3 #4\@nil{%
  \def\BKM@param{#1}%
  \let\BKM@temp\BKM@param
  \@onelevel@sanitize\BKM@temp
  \ifx\BKM@param\@empty
    \let\BKM@param\BKM@null
  \else
    \ifx\BKM@temp\BKM@null
    \else
      \BKM@CalcParam
    \fi
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
  \def\BKM@param{#2}%
  \let\BKM@temp\BKM@param
  \@onelevel@sanitize\BKM@temp
  \ifx\BKM@param\@empty
    \let\BKM@param\BKM@null
  \else
    \ifx\BKM@temp\BKM@null
    \else
      \BKM@CalcParam
    \fi
  \fi
  \edef\BKM@view{\BKM@view\space\BKM@param}%
  \def\BKM@param{#3}%
  \ifx\BKM@param\@empty
    \let\BKM@param\BKM@null
  \fi
```

```
  \edef\BKM@view{\BKM@view\space\BKM@param}%
}
```

\BKM@null

```
\def\BKM@null{null}
\@onelevel@sanitize\BKM@null
```

\BKM@CalcParam

```
\def\BKM@CalcParam{%
  \begingroup
  \let\calc\@firstofone
  \expandafter\BKM@@CalcParam\BKM@param\@empty\@empty\@nil
}
```

\BKM@@CalcParam

```
\def\BKM@@CalcParam#1#2#3\@nil{%
  \ifx\calc#1%
    \@ifundefined{calc@assign@dimen}{%
      \@ifundefined{dimexpr}{%
        \setlength{\dimen@}{#2}%
      }{%
        \setlength{\dimen@}{\dimexpr#2\relax}%
      }%
    }{%
      \setlength{\dimen@}{#2}%
    }%
    \dimen@.99626\dimen@
    \edef\BKM@param{\strip@pt\dimen@}%
    \expandafter\endgroup
    \expandafter\def\expandafter\BKM@param\expandafter{\BKM@param}%
  \else
    \endgroup
  \fi
}
```

3.1.4 Option atend

```
\DeclareBoolOption{atend}
\g@addto@macro\BKM@DisableOptions{%
  \DisableKeyvalOption[action=warning,package=bookmark]%
      {BKM}{atend}%
}
```

3.1.5 Option style

\bookmarkdefinestyle

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

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

\BKM@StyleCall

```
\def\BKM@StyleCall#1{%
  \@ifundefined{BKM@style@#1}{%
    \PackageWarning{bookmark}{%
```

```
      Ignoring unknown style ‘#1’%
    }%
  }{%
```

Check style stack.

```
    \BKM@oktrue
    \edef\BKM@StyleCurrent{#1}%
    \@onelevel@sanitize\BKM@StyleCurrent
    \let\BKM@StyleEntry\BKM@StyleEntryCheck
    \BKM@StyleStack
    \ifBKM@ok
      \expandafter\@firstofone
    \else
      \PackageError{bookmark}{%
        Ignoring recursive call of style ‘\BKM@StyleCurrent’%
      }\@ehc
      \expandafter\@gobble
    \fi
    {%
```

Push current style on stack.

```
      \let\BKM@StyleEntry\relax
      \edef\BKM@StyleStack{%
        \BKM@StyleEntry{\BKM@StyleCurrent}%
        \BKM@StyleStack
      }%
```

Call style.

```
      \expandafter\expandafter\expandafter\bookmarksetup
      \expandafter\expandafter\expandafter{%
        \csname BKM@style@\BKM@StyleCurrent\endcsname
      }%
```

Pop current style from stack.

```
      \BKM@StyleStackPop
    }%
  }%
}
```

`\BKM@StyleStackPop`

```
\def\BKM@StyleStackPop{%
  \let\BKM@StyleEntry\relax
  \edef\BKM@StyleStack{%
    \expandafter\@gobbletwo\BKM@StyleStack
  }%
}
```

`\BKM@StyleEntryCheck`

```
\def\BKM@StyleEntryCheck#1{%
  \def\BKM@temp{#1}%
  \ifx\BKM@temp\BKM@StyleCurrent
    \BKM@okfalse
  \fi
}
```

`\BKM@StyleStack`

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

3.1.6 Options for source file location

```
\DeclareStringOption{srcline}
\DeclareStringOption{srcfile}
```

3.1.7 Hook support

\BKM@hook

```
\def\BKM@hook{}

\define@key{BKM}{addtohook}{%
  \ltx@LocalAppendToMacro\BKM@hook{#1}%
}
```

bookmarkget

```
\newcommand*{\bookmarkget}[1]{%
  \romannumeral0%
  \ltx@ifundefined{bookmark@#1}{%
    \ltx@space
  }{%
    \expandafter\expandafter\expandafter\ltx@space
    \csname bookmark@#1\endcsname
  }%
}
```

3.1.8 Driver setup and loading

Driver detection.

\BKM@DefineDriverKey

```
\def\BKM@DefineDriverKey#1{%
  \define@key{BKM}{#1}[]{%
    \def\BKM@driver{#1}%
  }%
  \g@addto@macro\BKM@DisableOptions{%
    \DisableKeyvalOption[action=warning,package=bookmark]%
        {BKM}{#1}%
  }%
}

\BKM@DefineDriverKey{pdftex}
\BKM@DefineDriverKey{dvips}
\BKM@DefineDriverKey{dvipdfm}
\BKM@DefineDriverKey{dvipdfmx}
\BKM@DefineDriverKey{xetex}
\BKM@DefineDriverKey{vtex}
\define@key{BKM}{dvipdfmx-outline-open}[true]{%
 \PackageWarning{bookmark}{Option 'dvipdfmx-outline-open' is obsolete
   and ignored}{}}
```

\bookmark@driver

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

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

\BookmarkDriverDefault

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

\BKM@driver LuaTEX and pdfTEX share driver.

```
\ifpdf
  \def\BKM@driver{pdftex}%
  \ifx\pdfoutline\@undefined
    \ifx\pdfextension\@undefined\else
      \protected\def\pdfoutline{\pdfextension outline }
    \fi
  \fi
\else
  \ifxetex
```

```
    \def\BKM@driver{dvipdfm}%
  \else
    \ifvtex
      \def\BKM@driver{vtex}%
    \else
      \edef\BKM@driver{\BookmarkDriverDefault}%
    \fi
  \fi
\fi
```

Process options.

```
\ProcessKeyvalOptions*
\BKM@DisableOptions
```

Option draft

```
\ifBKM@draft
  \PackageWarningNoLine{bookmark}{Draft mode on}%
  \let\bookmarksetup\ltx@gobble
  \let\BookmarkAtEnd\ltx@gobble
  \let\bookmarkdefinestyle\ltx@gobbletwo
  \let\bookmarkget\ltx@gobble
  \let\pdfbookmark\ltx@undefined
  \newcommand*{\pdfbookmark}[3][]{}%
  \let\currentpdfbookmark\ltx@gobbletwo
  \let\subpdfbookmark\ltx@gobbletwo
  \let\belowpdfbookmark\ltx@gobbletwo
  \newcommand*{\bookmark}[2][]{}%
  \renewcommand*{\Hy@writebookmark}[5]{}%
  \let\ReadBookmarks\relax
  \let\BKM@DefGotoNameAction\ltx@gobbletwo % package 'hypdestopt'
  \expandafter\endinput
\fi
```

Driver validation and loading.

```
\def\BKM@temp{dvipdfmx}%
\ifx\BKM@temp\BKM@driver
  \def\BKM@driver{dvipdfm}%
\fi
\def\BKM@temp{pdftex}%
\ifpdf
  \ifx\BKM@temp\BKM@driver
  \else
    \PackageWarningNoLine{bookmark}{%
      Wrong driver '\BKM@driver', using 'pdftex' instead%
    }%
    \let\BKM@driver\BKM@temp
  \fi
\else
  \ifx\BKM@temp\BKM@driver
    \PackageError{bookmark}{%
      Wrong driver, pdfTeX is not running in PDF mode.\MessageBreak
      Package loading is aborted%
    }\@ehc
    \expandafter\expandafter\expandafter\endinput
  \fi
  \def\BKM@temp{dvipdfm}%
  \ifxetex
    \ifx\BKM@temp\BKM@driver
    \else
      \PackageWarningNoLine{bookmark}{%
        Wrong driver '\BKM@driver',\MessageBreak
```

```
        using ‘dvipdfm’ for XeTeX instead%
      }%
      \let\BKM@driver\BKM@temp
    \fi
  \else
    \def\BKM@temp{vtex}%
    \ifvtex
      \ifx\BKM@temp\BKM@driver
      \else
        \PackageWarningNoLine{bookmark}{%
          Wrong driver ‘\BKM@driver’,\MessageBreak
          using ‘vtex’ for VTeX instead%
        }%
        \let\BKM@driver\BKM@temp
      \fi
    \else
      \ifx\BKM@temp\BKM@driver
        \PackageError{bookmark}{%
          Wrong driver, VTeX is not running in PDF mode.\MessageBreak
          Package loading is aborted%
        }\@ehc
        \expandafter\expandafter\expandafter\endinput
      \fi
    \fi
  \fi
\fi
\providecommand\IfFormatAtLeastTF{\@ifl@t@r\fmtversion}
\IfFormatAtLeastTF{2020/10/01}{}{\edef\BKM@driver{\BKM@driver-2019-12-03}}
\InputIfFileExists{bkm-\BKM@driver.def}{}{%
  \PackageError{bookmark}{%
    Unsupported driver ‘\BKM@driver’.\MessageBreak
    Package loading is aborted%
  }\@ehc
  \endinput
}
```

3.1.9 Compatibility for **hyperref**

\pdfbookmark

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

\currentpdfbookmark

```
\def\currentpdfbookmark{%
  \pdfbookmark[\BKM@currentlevel]%
}
```

\subpdfbookmark

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

\belowpdfbookmark

```
\def\belowpdfbookmark#1#2{%
  \xdef\BKM@gtemp{\number\BKM@currentlevel}%
  \subpdfbookmark{#1}{#2}%
  \global\let\BKM@currentlevel\BKM@gtemp
}
```

Section number, text, label, level, file

\Hy@writebookmark

```
\def\Hy@writebookmark#1#2#3#4#5{%
  \ifnum#4>\BKM@depth\relax
  \else
    \edef\BKM@type{#5}%
    \ifx\BKM@type\Hy@bookmarkstype
      \begingroup
        \ifBKM@numbered
          \let\numberline\Hy@numberline
          \let\booknumberline\Hy@numberline
          \let\partnumberline\Hy@numberline
          \let\chapternumberline\Hy@numberline
        \else
          \let\numberline\@gobble
          \let\booknumberline\@gobble
          \let\partnumberline\@gobble
          \let\chapternumberline\@gobble
        \fi
        \bookmark[level=#4,dest={\HyperDestNameFilter{#3}}]{#2}%
      \endgroup
    \fi
  \fi
}
```

\ReadBookmarks

```
\let\ReadBookmarks\relax
```

⟨/package⟩

3.2 Driver for dvipdfm

```
⟨*dvipdfm⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-dvipdfm.def}%
  [2023-12-05 v1.30 bookmark driver for dvipdfm (HO)]%
```

\BKM@id

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

\BKM@0

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

\ifBKM@sw

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

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

```
\newcommand\BKM@struct@dest{}
\ExplSyntaxOn
\IfDocumentMetadataTF
  {
    \tag_if_active:T
     {
       \def\BKM@struct@dest{/SD~@pdf.SDest.\BKM@dest}
     }

  }{}
\ExplSyntaxOff
```

\bookmark

```
\newcommand*{\bookmark}[2][]{%
  \if@filesw
    \begingroup
      \def\bookmark@text{#2}%
      \BKM@setup{#1}%
      \edef\BKM@prev{\the\BKM@id}%
      \global\advance\BKM@id\@ne
      \BKM@swtrue
      \@whilesw\ifBKM@sw\fi{%
        \def\BKM@abslevel{1}%
        \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
          \BKM@startatrootfalse
          \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
            0{\BKM@level}\BKM@abslevel
          }%
          \BKM@swfalse
        \else
          \expandafter\expandafter\expandafter\BKM@getx
              \csname BKM@\BKM@prev\endcsname
          \ifnum\BKM@level>\BKM@x@level\relax
            \BKM@CalcExpr\BKM@abslevel\BKM@x@abslevel+1%
            \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
              {\BKM@prev}{\BKM@level}\BKM@abslevel
            }%
            \BKM@swfalse
          \else
            \let\BKM@prev\BKM@x@parent
          \fi
        \fi
      }%
      \csname HyPsd@XeTeXBigCharstrue\endcsname
      \pdfstringdef\BKM@title{\bookmark@text}%
      \edef\BKM@FLAGS{\BKM@PrintStyle}%
      \let\BKM@action\@empty
      \ifx\BKM@gotor\@empty
        \ifx\BKM@dest\@empty
          \ifx\BKM@named\@empty
            \ifx\BKM@rawaction\@empty
              \ifx\BKM@uri\@empty
                \ifx\BKM@page\@empty
                  \PackageError{bookmark}{Missing action}\@ehc
                  \edef\BKM@action{/Dest[@page1/Fit]}%
                \else
                  \ifx\BKM@view\@empty
                    \def\BKM@view{Fit}%
                  \fi
                  \edef\BKM@action{/Dest[@page\BKM@page/\BKM@view]}%
                \fi
              \else
                \BKM@EscapeString\BKM@uri
                \edef\BKM@action{%
                  /A<<%
                    /S/URI%
                    /URI(\BKM@uri)%
                  >>%
                }%
              \fi
            \else
              \edef\BKM@action{/A<<\BKM@rawaction>>}%
            \fi
          \else
```

```
          \BKM@EscapeName\BKM@named
          \edef\BKM@action{%
            /A<</S/Named/N/\BKM@named>>%
          }%
        \fi
      \else
        \BKM@EscapeString\BKM@dest
        \edef\BKM@action{%
          /A<<%
            /S/GoTo%
            /D(\BKM@dest)%
            \BKM@struct@dest
          >>%
        }%
      \fi
    \else
      \ifx\BKM@dest\@empty
        \ifx\BKM@page\@empty
          \def\BKM@page{0}%
        \else
          \BKM@CalcExpr\BKM@page\BKM@page-1%
        \fi
        \ifx\BKM@view\@empty
          \def\BKM@view{Fit}%
        \fi
        \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
      \else
        \BKM@EscapeString\BKM@dest
        \edef\BKM@action{/D(\BKM@dest)}%
      \fi
      \BKM@EscapeString\BKM@gotor
      \edef\BKM@action{%
        /A<<%
          /S/GoToR%
          /F(\BKM@gotor)%
          \BKM@action
        >>%
      }%
    \fi
    \special{pdf:%
      out
            [%
            \ifBKM@open
              \ifnum\BKM@level<%
                  \expandafter\ltx@firstofone\expandafter
                  {\number\BKM@openlevel} %
              \else
                -%
              \fi
            \else
              -%
            \fi
            ] %
          \BKM@abslevel
      <<%
        /Title(\BKM@title)%
        \ifx\BKM@color\@empty
        \else
          /C[\BKM@color]%
        \fi
        \ifnum\BKM@FLAGS>\z@
          /F \BKM@FLAGS
```

```
          \fi
          \BKM@action
        >>%
      }%
    \endgroup
  \fi
}
```

\BKM@getx

```
\def\BKM@getx#1#2#3{%
  \def\BKM@x@parent{#1}%
  \def\BKM@x@level{#2}%
  \def\BKM@x@abslevel{#3}%
}
```

⟨/dvipdfm⟩

3.3 Driver for VTEX

```
⟨*vtex⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-vtex.def}%
  [2023-12-05 v1.30 bookmark driver for VTeX (HO)]%
\ifvtexpdf
\else
  \PackageWarningNoLine{bookmark}{%
    The VTeX driver only supports PDF mode%
  }%
\fi
```

\BKM@id

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

\BKM@0

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

\ifBKM@sw

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

\bookmark

```
\newcommand*{\bookmark}[2][]{%
  \if@filesw
    \begingroup
      \def\bookmark@text{#2}%
      \BKM@setup{#1}%
      \edef\BKM@prev{\the\BKM@id}%
      \global\advance\BKM@id\@ne
      \BKM@swtrue
      \@whilesw\ifBKM@sw\fi{%
        \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
          \BKM@startatrootfalse
          \def\BKM@parent{0}%
          \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
            0{\BKM@level}%
          }%
          \BKM@swfalse
        \else
          \expandafter\expandafter\expandafter\BKM@getx
              \csname BKM@\BKM@prev\endcsname
          \ifnum\BKM@level>\BKM@x@level\relax
            \let\BKM@parent\BKM@prev
```

```
          \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
            {\BKM@prev}{\BKM@level}%
          }%
          \BKM@swfalse
        \else
          \let\BKM@prev\BKM@x@parent
        \fi
      \fi
    }%
    \pdfstringdef\BKM@title{\bookmark@text}%
    \BKM@vtex@title
    \edef\BKM@FLAGS{\BKM@PrintStyle}%
    \let\BKM@action\@empty
    \ifx\BKM@gotor\@empty
      \ifx\BKM@dest\@empty
        \ifx\BKM@named\@empty
          \ifx\BKM@rawaction\@empty
            \ifx\BKM@uri\@empty
              \ifx\BKM@page\@empty
                \PackageError{bookmark}{Missing action}\@ehc
                \def\BKM@action{!1}%
              \else
                \edef\BKM@action{!\BKM@page}%
              \fi
            \else
              \BKM@EscapeString\BKM@uri
              \edef\BKM@action{%
                <u=%
                  /S/URI%
                  /URI(\BKM@uri)%
                >%
              }%
            \fi
          \else
            \edef\BKM@action{<u=\BKM@rawaction>}%
          \fi
        \else
          \BKM@EscapeName\BKM@named
          \edef\BKM@action{%
            <u=%
              /S/Named%
              /N/\BKM@named
            >%
          }%
        \fi
      \else
        \BKM@EscapeString\BKM@dest
        \edef\BKM@action{\BKM@dest}%
      \fi
    \else
      \ifx\BKM@dest\@empty
        \ifx\BKM@page\@empty
          \def\BKM@page{1}%
        \fi
        \ifx\BKM@view\@empty
          \def\BKM@view{Fit}%
        \fi
        \edef\BKM@action{/D[\BKM@page/\BKM@view]}%
      \else
        \BKM@EscapeString\BKM@dest
        \edef\BKM@action{/D(\BKM@dest)}%
      \fi
```

```
        \BKM@EscapeString\BKM@gotor
        \edef\BKM@action{%
          <u=%
            /S/GoToR%
            /F(\BKM@gotor)%
            \BKM@action
          >>%
        }%
      \fi
      \ifx\BKM@color\@empty
        \let\BKM@RGBcolor\@empty
      \else
        \expandafter\BKM@toRGB\BKM@color\@nil
      \fi
      \special{%
        !outline \BKM@action;%
        p=\BKM@parent,%
        i=\number\BKM@id,%
        s=%
          \ifBKM@open
            \ifnum\BKM@level<\BKM@openlevel
              o%
            \else
              c%
            \fi
          \else
            c%
          \fi,%
        \ifx\BKM@RGBcolor\@empty
        \else
          c=\BKM@RGBcolor,%
        \fi
        \ifnum\BKM@FLAGS>\z@
          f=\BKM@FLAGS,%
        \fi
        t=\BKM@title
      }%
    \endgroup
  \fi
}
```

\BKM@getx

```
\def\BKM@getx#1#2{%
  \def\BKM@x@parent{#1}%
  \def\BKM@x@level{#2}%
}
```

\BKM@toRGB

```
\def\BKM@toRGB#1 #2 #3\@nil{%
  \let\BKM@RGBcolor\@empty
  \BKM@toRGBComponent{#1}%
  \BKM@toRGBComponent{#2}%
  \BKM@toRGBComponent{#3}%
}
```

\BKM@toRGBComponent

```
\def\BKM@toRGBComponent#1{%
  \dimen@=#1pt\relax
  \ifdim\dimen@>\z@
    \ifdim\dimen@<\p@
      \dimen@=255\dimen@
      \advance\dimen@ by 32768sp\relax
```

```
      \divide\dimen@ by 65536\relax
      \dimen@ii=\dimen@
      \divide\dimen@ii by 16\relax
      \edef\BKM@RGBcolor{%
        \BKM@RGBcolor
        \BKM@toHexDigit\dimen@ii
      }%
      \dimen@ii=16\dimen@ii
      \advance\dimen@-\dimen@ii
      \edef\BKM@RGBcolor{%
        \BKM@RGBcolor
        \BKM@toHexDigit\dimen@
      }%
    \else
      \edef\BKM@RGBcolor{\BKM@RGBcolor FF}%
    \fi
  \else
    \edef\BKM@RGBcolor{\BKM@RGBcolor00}%
  \fi
}
```

\BKM@toHexDigit

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

\begingroup
  \catcode`\|=0 %
  \catcode`\\=12 %
```

\BKM@vtex@title

```
  |gdef|BKM@vtex@title{%
    |@onelevel@sanitize|BKM@title
    |edef|BKM@title{|expandafter|BKM@vtex@leftparen|BKM@title\(|@nil}%
    |edef|BKM@title{|expandafter|BKM@vtex@rightparen|BKM@title\)|@nil}%
    |edef|BKM@title{|expandafter|BKM@vtex@zero|BKM@title\0|@nil}%
    |edef|BKM@title{|expandafter|BKM@vtex@one|BKM@title\1|@nil}%
    |edef|BKM@title{|expandafter|BKM@vtex@two|BKM@title\2|@nil}%
    |edef|BKM@title{|expandafter|BKM@vtex@three|BKM@title\3|@nil}%
  }%
```

\BKM@vtex@leftparen

```
  |gdef|BKM@vtex@leftparen#1\(#2|@nil{%
    #1%
    |ifx||#2||%
    |else
      (%
      |ltx@ReturnAfterFi{%
        |BKM@vtex@leftparen#2|@nil
      }%
    |fi
  }%
```

\BKM@vtex@rightparen

```
  |gdef|BKM@vtex@rightparen#1\)#2|@nil{%
    #1%
    |ifx||#2||%
    |else
      )%
```

```
      |ltx@ReturnAfterFi{%
        |BKM@vtex@rightparen#2|@nil
      }%
    |fi
  }%
```

\BKM@vtex@zero

```
  |gdef|BKM@vtex@zero#1\0#2|@nil{%
    #1%
    |ifx||#2||%
    |else
      |noexpand|hv@pdf@char0%
      |ltx@ReturnAfterFi{%
        |BKM@vtex@zero#2|@nil
      }%
    |fi
  }%
```

\BKM@vtex@one

```
  |gdef|BKM@vtex@one#1\1#2|@nil{%
    #1%
    |ifx||#2||%
    |else
      |noexpand|hv@pdf@char1%
      |ltx@ReturnAfterFi{%
        |BKM@vtex@one#2|@nil
      }%
    |fi
  }%
```

\BKM@vtex@two

```
  |gdef|BKM@vtex@two#1\2#2|@nil{%
    #1%
    |ifx||#2||%
    |else
      |noexpand|hv@pdf@char2%
      |ltx@ReturnAfterFi{%
        |BKM@vtex@two#2|@nil
      }%
    |fi
  }%
```

\BKM@vtex@three

```
  |gdef|BKM@vtex@three#1\3#2|@nil{%
    #1%
    |ifx||#2||%
    |else
      |noexpand|hv@pdf@char3%
      |ltx@ReturnAfterFi{%
        |BKM@vtex@three#2|@nil
      }%
    |fi
  }%

|endgroup
```

⟨/vtex⟩

3.4 Driver for pdfTEX

```
⟨*pdftex⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-pdftex.def}%
```

```
  [2023-12-05 v1.30 bookmark driver for pdfTeX and luaTeX (HO)]%
```

\BKM@DO@entry

```
\def\BKM@DO@entry#1#2{%
  \begingroup
    \kvsetkeys{BKM@DO}{#1}%
    \def\BKM@DO@title{#2}%
    \ifx\BKM@DO@srcfile\@empty
    \else
      \BKM@UnescapeHex\BKM@DO@srcfile
    \fi
    \BKM@UnescapeHex\BKM@DO@title
    \expandafter\expandafter\expandafter\BKM@getx
        \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
    \let\BKM@attr\@empty
    \ifx\BKM@DO@flags\@empty
    \else
      \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
    \fi
    \ifx\BKM@DO@color\@empty
    \else
      \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
    \fi
    \ifx\BKM@attr\@empty
    \else
      \edef\BKM@attr{attr{\BKM@attr}}%
    \fi
    \let\BKM@action\@empty
    \ifx\BKM@DO@gotor\@empty
      \ifx\BKM@DO@dest\@empty
        \ifx\BKM@DO@named\@empty
          \ifx\BKM@DO@rawaction\@empty
            \ifx\BKM@DO@uri\@empty
              \ifx\BKM@DO@page\@empty
                \PackageError{bookmark}{%
                  Missing action\BKM@SourceLocation
                }\@ehc
                \edef\BKM@action{goto page1{/Fit}}%
              \else
                \ifx\BKM@DO@view\@empty
                  \def\BKM@DO@view{Fit}%
                \fi
                \edef\BKM@action{goto page\BKM@DO@page{/\BKM@DO@view}}%
              \fi
            \else
              \BKM@UnescapeHex\BKM@DO@uri
              \BKM@EscapeString\BKM@DO@uri
              \edef\BKM@action{user{<</S/URI/URI(\BKM@DO@uri)>>}}%
            \fi
          \else
            \BKM@UnescapeHex\BKM@DO@rawaction
            \edef\BKM@action{%
              user{%
                <<%
                  \BKM@DO@rawaction
                >>%
              }%
            }%
          \fi
        \else
          \BKM@EscapeName\BKM@DO@named
          \edef\BKM@action{%
            user{<</S/Named/N/\BKM@DO@named>>}%
```

```
          }%
        \fi
      \else
        \BKM@UnescapeHex\BKM@DO@dest
        \BKM@DefGotoNameAction\BKM@action\BKM@DO@dest
      \fi
    \else
      \ifx\BKM@DO@dest\@empty
        \ifx\BKM@DO@page\@empty
          \def\BKM@DO@page{0}%
        \else
          \BKM@CalcExpr\BKM@DO@page\BKM@DO@page-1%
        \fi
        \ifx\BKM@DO@view\@empty
          \def\BKM@DO@view{Fit}%
        \fi
        \edef\BKM@action{/D[\BKM@DO@page/\BKM@DO@view]}%
      \else
        \BKM@UnescapeHex\BKM@DO@dest
        \BKM@EscapeString\BKM@DO@dest
        \edef\BKM@action{/D(\BKM@DO@dest)}%
      \fi
      \BKM@UnescapeHex\BKM@DO@gotor
      \BKM@EscapeString\BKM@DO@gotor
      \edef\BKM@action{%
        user{%
          <<%
            /S/GoToR%
            /F(\BKM@DO@gotor)%
            \BKM@action
          >>%
        }%
      }%
    \fi
    \pdfoutline\BKM@attr\BKM@action
                count\ifBKM@DO@open\else-\fi\BKM@x@childs
                {\BKM@DO@title}%
  \endgroup
}
```

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

```
\def\BKM@DefGotoNameAction#1#2{%
  \BKM@EscapeString\BKM@DO@dest
  \edef#1{goto name{#2}}%
 }
```

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

```
\ExplSyntaxOn
\IfDocumentMetadataTF
 {
   \tag_if_active:T
    {
      \def\BKM@DefGotoNameAction#1#2
       {
        \BKM@EscapeString\BKM@DO@dest
        \edef#1{goto~struct~name~{#2}~name~{#2}}%
       }
    }
 }{}
\ExplSyntaxOff
```

⟨/pdftex⟩

```
⟨*pdftex | pdfmark⟩
```

\BKM@SourceLocation

```
\def\BKM@SourceLocation{%
  \ifx\BKM@DO@srcfile\@empty
    \ifx\BKM@DO@srcline\@empty
    \else
      .\MessageBreak
      Source: line \BKM@DO@srcline
    \fi
  \else
    \ifx\BKM@DO@srcline\@empty
      .\MessageBreak
      Source: file ‘\BKM@DO@srcfile’%
    \else
      .\MessageBreak
      Source: file ‘\BKM@DO@srcfile’, line \BKM@DO@srcline
    \fi
  \fi
}
```

```
⟨/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

```
⟨*dvips⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-dvips.def}%
  [2023-12-05 v1.30 bookmark driver for dvips (HO)]%
```

\BKM@PSHeaderFile

```
\def\BKM@PSHeaderFile#1{%
  \special{PSfile=#1}%
}
```

\BKM@filename

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

\AddToHook{shipout/lastpage}{%
  \BKM@pdfmark@out
  \BKM@PSHeaderFile\BKM@filename
  }
```

```
⟨/dvips⟩
```

3.5.2 Common part

```
⟨*pdfmark⟩
```

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

```
\def\BKM@pdfmark@out{%
  \if@filesw
    \newwrite\BKM@file
    \immediate\openout\BKM@file=\BKM@filename\relax
    \BKM@write{\@percentchar!}%
    \BKM@write{/pdfmark where{pop}}%
    \BKM@write{%
      {%
```

```
        /globaldict where{pop globaldict}{userdict}ifelse%
        /pdfmark/cleartomark load put%
      }%
    }%
    \BKM@write{ifelse}%
  \else
    \let\BKM@write\@gobble
    \let\BKM@DO@entry\@gobbletwo
  \fi
}
```

\BKM@write

```
\def\BKM@write#{%
  \immediate\write\BKM@file
}
```

\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.

```
\def\BKM@DO@entry#1#2{%
  \begingroup
    \kvsetkeys{BKM@DO}{#1}%
    \ifx\BKM@DO@srcfile\@empty
    \else
      \BKM@UnescapeHex\BKM@DO@srcfile
    \fi
    \def\BKM@DO@title{#2}%
    \BKM@UnescapeHex\BKM@DO@title
    \expandafter\expandafter\expandafter\BKM@getx
        \csname BKM@\BKM@DO@id\endcsname\@empty\@empty
    \let\BKM@attr\@empty
    \ifx\BKM@DO@flags\@empty
    \else
      \edef\BKM@attr{\BKM@attr/F \BKM@DO@flags}%
    \fi
    \ifx\BKM@DO@color\@empty
    \else
      \edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}%
    \fi
    \let\BKM@action\@empty
    \ifx\BKM@DO@gotor\@empty
      \ifx\BKM@DO@dest\@empty
        \ifx\BKM@DO@named\@empty
          \ifx\BKM@DO@rawaction\@empty
            \ifx\BKM@DO@uri\@empty
              \ifx\BKM@DO@page\@empty
                \PackageError{bookmark}{%
                  Missing action\BKM@SourceLocation
                }\@ehc
                \edef\BKM@action{%
                  /Action/GoTo%
                  /Page 1%
                  /View[/Fit]%
                }%
              \else
                \ifx\BKM@DO@view\@empty
                  \def\BKM@DO@view{Fit}%
                \fi
                \edef\BKM@action{%
                  /Action/GoTo%
                  /Page \BKM@DO@page
                  /View[/\BKM@DO@view]%
```

```
            }%
          \fi
        \else
          \BKM@UnescapeHex\BKM@DO@uri
          \BKM@EscapeString\BKM@DO@uri
          \edef\BKM@action{%
            /Action<<%
              /Subtype/URI%
              /URI(\BKM@DO@uri)%
            >>%
          }%
        \fi
      \else
        \BKM@UnescapeHex\BKM@DO@rawaction
        \edef\BKM@action{%
          /Action<<%
            \BKM@DO@rawaction
          >>%
        }%
      \fi
    \else
      \BKM@EscapeName\BKM@DO@named
      \edef\BKM@action{%
        /Action<<%
          /Subtype/Named%
          /N/\BKM@DO@named
        >>%
      }%
    \fi
  \else
    \BKM@UnescapeHex\BKM@DO@dest
    \BKM@EscapeString\BKM@DO@dest
    \edef\BKM@action{%
      /Action/GoTo%
      /Dest(\BKM@DO@dest)cvn%
    }%
  \fi
\else
  \ifx\BKM@DO@dest\@empty
    \ifx\BKM@DO@page\@empty
      \def\BKM@DO@page{1}%
    \fi
    \ifx\BKM@DO@view\@empty
      \def\BKM@DO@view{Fit}%
    \fi
    \edef\BKM@action{%
      /Page \BKM@DO@page
      /View[/\BKM@DO@view]%
    }%
  \else
    \BKM@UnescapeHex\BKM@DO@dest
    \BKM@EscapeString\BKM@DO@dest
    \edef\BKM@action{%
      /Dest(\BKM@DO@dest)cvn%
    }%
  \fi
  \BKM@UnescapeHex\BKM@DO@gotor
  \BKM@EscapeString\BKM@DO@gotor
  \edef\BKM@action{%
    /Action/GoToR%
    /File(\BKM@DO@gotor)%
    \BKM@action
```

```
      }%
    \fi
    \BKM@write{[}%
    \BKM@write{/Title(\BKM@DO@title)}%
    \ifnum\BKM@x@childs>\z@
      \BKM@write{/Count \ifBKM@DO@open\else-\fi\BKM@x@childs}%
    \fi
    \ifx\BKM@attr\@empty
    \else
      \BKM@write{\BKM@attr}%
    \fi
    \BKM@write{\BKM@action}%
    \BKM@write{/OUT pdfmark}%
  \endgroup
}
```

⟨/pdfmark⟩

3.6 Common part for **pdftex** and **pdfmark**

⟨∗pdftex | pdfmark⟩

3.6.1 Write auxiliary file

```
\AddToHook{begindocument}{%
 \immediate\write\@mainaux{\string\providecommand\string\BKM@entry[2]{}}}
```

`\BKM@id`

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

`\BKM@0`

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

`\ifBKM@sw`

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

`\bookmark`

```
\newcommand*{\bookmark}[2][]{%
  \if@filesw
    \begingroup
      \BKM@InitSourceLocation
      \def\bookmark@text{#2}%
      \BKM@setup{#1}%
      \ifx\BKM@srcfile\@empty
      \else
        \BKM@EscapeHex\BKM@srcfile
      \fi
      \edef\BKM@prev{\the\BKM@id}%
      \global\advance\BKM@id\@ne
      \BKM@swtrue
      \@whilesw\ifBKM@sw\fi{%
        \ifnum\ifBKM@startatroot\z@\else\BKM@prev\fi=\z@
          \BKM@startatrootfalse
          \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
            0{\BKM@level}0%
          }%
          \BKM@swfalse
        \else
          \expandafter\expandafter\expandafter\BKM@getx
              \csname BKM@\BKM@prev\endcsname
          \ifnum\BKM@level>\BKM@x@level\relax
            \expandafter\xdef\csname BKM@\the\BKM@id\endcsname{%
```

```
              {\BKM@prev}{\BKM@level}0%
            }%
            \ifnum\BKM@prev>\z@
              \BKM@CalcExpr\BKM@CalcResult\BKM@x@childs+1%
              \expandafter\xdef\csname BKM@\BKM@prev\endcsname{%
                {\BKM@x@parent}{\BKM@x@level}{\BKM@CalcResult}%
              }%
            \fi
            \BKM@swfalse
          \else
            \let\BKM@prev\BKM@x@parent
          \fi
        \fi
      }%
      \pdfstringdef\BKM@title{\bookmark@text}%
      \edef\BKM@FLAGS{\BKM@PrintStyle}%
      \csname BKM@HypDestOptHook\endcsname
      \BKM@EscapeHex\BKM@dest
      \BKM@EscapeHex\BKM@uri
      \BKM@EscapeHex\BKM@gotor
      \BKM@EscapeHex\BKM@rawaction
      \BKM@EscapeHex\BKM@title
      \immediate\write\@mainaux{%
        \string\BKM@entry{%
          id=\number\BKM@id
          \ifBKM@open
            \ifnum\BKM@level<\BKM@openlevel
              ,open%
            \fi
          \fi
          \BKM@auxentry{dest}%
          \BKM@auxentry{named}%
          \BKM@auxentry{uri}%
          \BKM@auxentry{gotor}%
          \BKM@auxentry{page}%
          \BKM@auxentry{view}%
          \BKM@auxentry{rawaction}%
          \BKM@auxentry{color}%
          \ifnum\BKM@FLAGS>\z@
            ,flags=\BKM@FLAGS
          \fi
          \BKM@auxentry{srcline}%
          \BKM@auxentry{srcfile}%
        }{\BKM@title}%
      }%
    \endgroup
  \fi
}
```

\BKM@getx

```
\def\BKM@getx#1#2#3{%
  \def\BKM@x@parent{#1}%
  \def\BKM@x@level{#2}%
  \def\BKM@x@childs{#3}%
}
```

\BKM@auxentry

```
\def\BKM@auxentry#1{%
  \expandafter\ifx\csname BKM@#1\endcsname\@empty
  \else
    ,#1={\csname BKM@#1\endcsname}%
  \fi
}
```

\BKM@InitSourceLocation

```
\def\BKM@InitSourceLocation{%
  \edef\BKM@srcline{\the\inputlineno}%
  \BKM@LuaTeX@InitFile
  \ifx\BKM@srcfile\@empty
    \ltx@IfUndefined{currfilepath}{}{%
      \edef\BKM@srcfile{\currfilepath}%
    }%
  \fi
}
```

\BKM@LuaTeX@InitFile

```
\ifluatex
    \def\BKM@LuaTeX@InitFile{%
      \begingroup
        \ltx@LocToksA={}%
      \edef\x{\endgroup
        \def\noexpand\BKM@srcfile{%
          \the\expandafter\ltx@LocToksA
          \directlua{%
             if status and status.filename then %
               tex.settoks('ltx@LocToksA', status.filename)%
             end%
          }%
        }%
      }\x
    }%
\else
  \let\BKM@LuaTeX@InitFile\relax
\fi
```

3.6.2 Read auxiliary data

```
\SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
\DeclareStringOption[0]{id}
\DeclareBoolOption{open}
\DeclareStringOption{flags}
\DeclareStringOption{color}
\DeclareStringOption{dest}
\DeclareStringOption{named}
\DeclareStringOption{uri}
\DeclareStringOption{gotor}
\DeclareStringOption{page}
\DeclareStringOption{view}
\DeclareStringOption{rawaction}
\DeclareStringOption{srcline}
\DeclareStringOption{srcfile}
```

```
\AtBeginDocument{%
  \let\BKM@entry\BKM@DO@entry
}
```

⟨/pdftex | pdfmark⟩

3.7 Option atend

3.7.1 Hook

⟨*package⟩

```
\ifBKM@atend
\else
```

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

```
  \newcommand{\BookmarkAtEnd}[1]{%
    \PackageWarning{bookmark}{%
      Ignored, because option 'atend' is missing%
    }%
  }%

  \expandafter\endinput
\fi
```

\BookmarkAtEnd

```
\newcommand*{\BookmarkAtEnd}{%
  \g@addto@macro\BKM@EndHook
}

\let\BKM@EndHook\@empty
```

⟨/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.

```
⟨*pdftex⟩
\ifBKM@atend
  \AddToHook{enddocument/afterlastpage}{%
    \BKM@EndHook
  }%
\fi
⟨/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 LaTeX 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.

```
⟨*dvipdfm | vtex | pdfmark⟩
\ifBKM@atend
  \AddToHook{shipout/lastpage}{\BKM@EndHook}%
\fi
⟨/dvipdfm | vtex | pdfmark⟩
```

4 Installation

4.1 Download

Package. This package is available on CTAN[1]:

CTAN:macros/latex/contrib/bookmark/bookmark.dtx The source file.

CTAN:macros/latex/contrib/bookmark/bookmark.pdf Documentation.

[1] CTAN:pkg/bookmark

4.2 Package installation

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

```
tex bookmark.dtx
```

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

```
bookmark.sty               → tex/latex/bookmark/bookmark.sty
bkm-dvipdfm.def            → tex/latex/bookmark/bkm-dvipdfm.def
bkm-dvips.def              → tex/latex/bookmark/bkm-dvips.def
bkm-pdftex.def             → tex/latex/bookmark/bkm-pdftex.def
bkm-vtex.def               → tex/latex/bookmark/bkm-vtex.def
bkm-dvipdfm-2019-12-03.def → tex/latex/bookmark/bkm-dvipdfm-2019-12-03.def
bkm-dvips-2019-12-03.def   → tex/latex/bookmark/bkm-dvips-2019-12-03.def
bkm-pdftex-2019-12-03.def  → tex/latex/bookmark/bkm-pdftex-2019-12-03.def
bkm-vtex-2019-12-03.def    → tex/latex/bookmark/bkm-vtex-2019-12-03.def
bookmark.pdf               → doc/latex/bookmark/bookmark.pdf
bookmark-example.tex       → doc/latex/bookmark/bookmark-example.tex
bookmark.dtx               → source/latex/bookmark/bookmark.dtx
```

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 `mktexlsr`.

4.4 Some details for the interested

Unpacking with LATEX. The `.dtx` chooses its action depending on the format:

plain TEX: Run docstrip and extract the files.

LATEX: Generate the documentation.

If you insist on using LATEX for docstrip (really, docstrip does not need LATEX), 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 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 bookmarkstype respected.

[2007/03/02 v0.5]

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

[2007/03/03 v0.6]

- Option numbered as alias for hyperref's bookmarksnumbered.

[2007/03/07 v0.7]

- Dependency from ε-TEX removed.

[2007/04/09 v0.8]

- Option atend added.
- Option rgbcolor removed. `rgbcolor=<r> <g> <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 $\geq$ 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 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 `\renewcommand`s 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. The older drivers are provided as frozen versions and are used if an older format is detected.
- 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

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

\" 33
\(. 1119, 1126

\) 1120, 1136
\@bookmarksopenlevel 201
\@car 215, 255, 409, 423
\@ehc 371, 413, 574, 695, 724, 736, 839, 989, 1225, 1392
\@empty 120, 126, 132, 210, 351, 366, 376, 381, 430, 447, 455, 463, 471, 489, 501, 511, 521, 832, 833, 834, 835, 836, 837, 838, 842, 876, 877, 882, 916, 982, 983, 984, 985, 986, 987, 988, 1020, 1021, 1024, 1041, 1042, 1060, 1077, 1196, 1202, 1203, 1204, 1208, 1212, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1228, 1259, 1260, 1265, 1311, 1312, 1318, 1366, 1373, 1374, 1375, 1379, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1399, 1444, 1445, 1448, 1475, 1497, 1570, 1578, 1633
\@firstofone 520, 570, 1109
\@gobble 425, 575, 768, 769, 770, 771, 1356
\@gobbletwo 594, 1357
\@ifl@t@r 730
\@ifundefined 525, 526, 548, 559
\@mainaux 1486, 1538
\@namedef 552, 786, 947, 1489
\@ne 805, 955, 1502
\@nil 215, 255, 384, 386, 392, 395, 398, 401, 416, 428, 442, 444, 483, 485, 521, 523, 1044, 1076
\@onelevel@sanitize 214, 254, 388, 420, 488, 500, 517, 566
\@percentchar 1346
\@undefined 642, 643
\@whilesw 807, 957, 1504
\\ 1116
\| 1115

Numbers

\0 . . . . . 1121, 1146
\1 . . . . . 1122, 1156
\2 . . . . . 1123, 1166
\3 . . . . . 1124, 1176

A

\AddToHook 1336, 1485, 1637, 1644
\advance 106, 805, 955, 1087, 1096, 1502
\AtBeginDocument 1616

B

\begin 19, 22
\belowpdfbookmark 670, 751
\bitsetClear 329, 336
\bitsetGet 340, 343
\bitsetGetDec 346
\bitsetReset 324
\bitsetSet 327, 334
\BKM@0 . . . . . 786, 947, 1489
\BKM@@@PatchHyperrefOption . 313, 315
\BKM@@CalcParam 521, 523
\BKM@@CheckRect 442, 444
\BKM@@CheckXYZ 483, 485
\BKM@@page 377
\BKM@@PatchHyperrefOption . . 310, 312
\BKM@abslevel . 808, 812, 819, 821, 913
\BKM@action 832, 840, 845, 849, 857, 861, 867, 885, 888, 891, 895, 923, 982, 990, 992, 996, 1004, 1008, 1017, 1027, 1030, 1033, 1037, 1047, 1216, 1226, 1231, 1236, 1240, 1250, 1256, 1268, 1272, 1276, 1281, 1286, 1383, 1393, 1402, 1411, 1420, 1428, 1438, 1451, 1458, 1464, 1467, 1479
\BKM@attr 1203, 1206, 1210, 1212, 1214, 1286, 1374, 1377, 1381, 1475, 1477
\BKM@auxentry 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1557, 1558, 1569
\BKM@CalcExpr 101, 287, 748, 819, 880, 1263, 1519
\BKM@CalcParam 437, 451, 459, 467, 475, 494, 506, 518
\BKM@CalcResult . 748, 749, 1519, 1521
\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, 916, 918, 1041, 1044
\BKM@currentlevel 178, 247, 277, 287, 290, 745, 748, 752, 754
\BKM@DefGotoNameAction 674, 1256, 1291
\BKM@DefineDriverKey 619, 628, 629, 630, 631, 632, 633
\BKM@depth 204, 206, 211, 228, 231, 237, 757
\BKM@dest 794, 834, 866, 870, 876, 887, 888, 984, 1016, 1017, 1020, 1029, 1030, 1533
\BKM@DisableOptions 190, 543, 623, 659
\BKM@DO@color . . 1208, 1210, 1379, 1381
\BKM@DO@dest 1218, 1255, 1256, 1259, 1270, 1271, 1272, 1292, 1302, 1385, 1436, 1437, 1440, 1444, 1456, 1457, 1459
\BKM@DO@entry . . 1192, 1357, 1363, 1617
\BKM@DO@flags . . 1204, 1206, 1375, 1377
\BKM@DO@gotor 1217, 1274, 1275, 1280, 1384, 1462, 1463, 1466
\BKM@DO@id 1202, 1373
\BKM@DO@named 1219, 1249, 1251, 1386, 1427, 1431
\BKM@DO@page 1222, 1231, 1260, 1261, 1263, 1268, 1389, 1404, 1445, 1446, 1452
\BKM@DO@rawaction 1220, 1239, 1243, 1387, 1419, 1422

\BKM@DO@srcfile 1196, 1198, 1311, 1320, 1323, 1366, 1368
\BKM@DO@srcline 1312, 1315, 1318, 1323
\BKM@DO@title 1195, 1200, 1288, 1370, 1371, 1471
\BKM@DO@uri 1221, 1234, 1235, 1236, 1388, 1409, 1410, 1414
\BKM@DO@view 1228, 1229, 1231, 1265, 1266, 1268, 1399, 1400, 1405, 1448, 1449, 1453
\BKM@driver 621, 637, 640, 678, 679, 683, 686, 688, 691, 700, 703, 706, 711, 714, 717, 720, 731, 732, 734
\BKM@EndHook . . . 1631, 1633, 1638, 1644
\BKM@entry 1486, 1539, 1617
\BKM@EscapeHex 131, 1499, 1533, 1534, 1535, 1536, 1537
\BKM@EscapeName 119, 860, 1007, 1249, 1427
\BKM@EscapeString 125, 848, 866, 887, 890, 995, 1016, 1029, 1032, 1235, 1271, 1275, 1292, 1302, 1410, 1437, 1457, 1463
\BKM@file 1344, 1345, 1361
\BKM@filename 1335, 1338, 1345
\BKM@FLAGS 831, 920, 921, 981, 1064, 1065, 1531, 1554, 1555
\BKM@getx 816, 929, 966, 1072, 1201, 1372, 1512, 1564
\BKM@gotor 833, 890, 894, 983, 1032, 1036, 1535
\BKM@gtemp 752, 754
\BKM@hook 175, 606, 608
\BKM@HookNext . 170, 172, 182, 185, 187
\BKM@HookNextClear 173, 184, 187
\BKM@id . . . 784, 804, 805, 811, 820, 945, 954, 955, 961, 970, 1049, 1487, 1501, 1502, 1507, 1515, 1540
\BKM@InitSourceLocation . 1494, 1575
\BKM@level 178, 251, 268, 271, 287, 289, 812, 818, 821, 903, 962, 968, 971, 1052, 1508, 1514, 1516, 1542
\BKM@LuaTeX@InitFile 1577, 1584
\BKM@MacroCurrentLevel 250, 277
\BKM@named 835, 860, 862, 985, 1007, 1011
\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, 905, 1052, 1542
\BKM@page 365, 366, 368, 369, 372, 376, 838, 845, 877, 878, 880, 885, 988, 992, 1021, 1022, 1027
\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 960, 969, 1048
\BKM@PatchHyperrefOption 309, 321, 322, 323
\BKM@pdfmark@out 1337, 1342
\BKM@prev 804, 809, 817, 821, 825, 954, 958, 967, 969, 971, 975, 1501, 1505, 1513, 1516, 1518, 1520, 1526
\BKM@PrintStyle . . 345, 831, 981, 1531
\BKM@PSHeaderFile 1332
\BKM@rawaction 836, 857, 986, 1004, 1536
\BKM@RGBcolor 1042, 1060, 1062, 1077, 1091, 1092, 1097, 1098, 1102, 1105
\BKM@SetDepthOrLevel 228, 231, 238, 268, 271
\BKM@setup 168, 803, 953, 1496
\BKM@setupnext 184
\BKM@SourceLocation . 1224, 1310, 1391
\BKM@srcfile 1497, 1499, 1578, 1580, 1589
\BKM@srcline 1576
\BKM@startatrootfalse 280, 810, 959, 1506
\BKM@startatroottrue 283
\BKM@struct@dest 788, 871
\BKM@StyleCall 555, 558
\BKM@StyleCurrent 565, 566, 573, 580, 585, 599
\BKM@StyleEntry . . . 567, 578, 580, 592
\BKM@StyleEntryCheck 567, 597
\BKM@StyleStack 568, 579, 581, 593, 594, 603
\BKM@StyleStackPop 587, 591
\BKM@swfalse 814, 823, 964, 973, 1510, 1524
\BKM@swtrue 806, 956, 1503
\BKM@temp 215, 216, 217, 218, 255, 256, 257, 258, 353, 359, 360, 361, 362, 363, 419, 420, 421, 422, 445, 449, 457, 465, 473, 478, 487, 488, 492, 499, 500, 504, 598, 599, 677, 678, 681, 683, 688, 691, 698, 700, 706, 709, 711, 717, 720
\BKM@TestViewType 389, 390, 391, 394, 397, 400, 403, 406, 418
\BKM@title 830, 915, 979, 1067, 1530, 1537, 1559
\BKM@toHexDigit 1093, 1099, 1108
\BKM@toRGB 1044, 1076
\BKM@toRGBComponent 1078, 1079, 1080, 1082
\BKM@type 387, 388, 411, 421, 432, 479, 759, 760
\BKM@UnescapeHex 137, 1198, 1200, 1234, 1239, 1255, 1270, 1274, 1368, 1371, 1409, 1419, 1436, 1456, 1462

\BKM@uri 837, 848, 852, 987, 995, 999, 1534
\BKM@view 381, 382, 414, 422, 439, 453, 461, 469, 477, 497, 509, 514, 842, 843, 845, 882, 883, 885, 1024, 1025, 1027
\BKM@vtex@leftparen 1126
\BKM@vtex@one 1156
\BKM@vtex@rightparen 1136
\BKM@vtex@three 1176
\BKM@vtex@title 980, 1117
\BKM@vtex@two 1166
\BKM@vtex@zero 1146
\BKM@write 1346, 1347, 1348, 1354, 1356, 1360, 1470, 1471, 1473, 1477, 1479, 1480
\BKM@x@abslevel 819, 932
\BKM@x@childs 1287, 1472, 1473, 1519, 1567
\BKM@x@level 818, 931, 968, 1074, 1514, 1521, 1566
\BKM@x@parent 825, 930, 975, 1073, 1521, 1526, 1565
\bookmark . . . 15, 16, 26, 62, 63, 64, 65, 67, 71, 75, 79, 85, 86, 87, 88, 89, 94, 671, 741, 773, 799, 949, 1491
\bookmark@bold 342
\bookmark@color 352
\bookmark@depth 237
\bookmark@dest 359
\bookmark@driver 637
\bookmark@gotor 362
\bookmark@italic 339
\bookmark@level 289
\bookmark@named 360
\bookmark@numbered 306
\bookmark@open 197
\bookmark@page 377
\bookmark@rawaction 363
\bookmark@text 802, 830, 952, 979, 1495, 1530
\bookmark@uri 361
\bookmark@view 382
\BookmarkAtEnd . 7, 13, 663, 1623, 1630
\bookmarkdefinestyle 6, 547, 664
\BookmarkDriverDefault 639, 654
\bookmarkget 6, 610, 610, 665
\bookmarksetup 11, 14, 35, 40, 46, 52, 57, 61, 167, 169, 172, 318, 583, 662
\bookmarksetupnext 181
\booknumberline 764, 769

C

\c@tocdepth 202, 204, 211
\calc 73, 520, 524
\catcode 1115, 1116
\chapternumberline 766, 771
\count@ 105, 106, 108, 241, 245
\csname 102, 232, 272, 310, 326, 333, 355, 356, 585, 616, 811, 817, 820, 829, 961, 967, 970, 1202, 1373, 1507, 1513, 1515, 1520, 1532, 1570, 1572
\currentpdfbookmark 668, 744
\currfilepath 1580

D

\DeclareBoolOption 188, 196, 278, 279, 291, 542, 1604
\DeclareComplementaryOption 189
\DeclareLocalOptions 142
\DeclareStringOption 200, 202, 247, 354, 604, 605, 1603, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615
\define@key 208, 248, 286, 325, 332, 348, 364, 378, 554, 607, 620, 634
\dimen@ 527, 529, 532, 534, 535, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1096, 1099
\dimen@ii 1089, 1090, 1093, 1095, 1096
\dimexpr 529
\directlua 1591
\DisableKeyvalOption 191, 193, 544, 624
\divide 1088, 1090
\documentclass 2

E

\EdefEscapeHex 134
\EdefEscapeName 122
\EdefEscapeString 128
\EdefUnescapeHex 138
\end 25, 95
\endcsname 102, 232, 272, 310, 326, 333, 355, 356, 585, 616, 811, 817, 820, 829, 961, 967, 970, 1202, 1373, 1507, 1513, 1515, 1520, 1532, 1570, 1572
\endinput 675, 696, 725, 737, 1628
\ExplSyntaxOff 798, 1307
\ExplSyntaxOn 789, 1295

F

\fmtversion 730

G

\g@addto@macro 294, 297, 300, 303, 543, 623, 1631

H

\hbox 240
\headheight 73
\headsep 73
\Hy@bookmarksdepth 206
\Hy@bookmarksnumberedfalse 303
\Hy@bookmarksnumberedtrue 300
\Hy@bookmarkstype 760
\Hy@numberline 763, 764, 765, 766
\Hy@writebookmark 672, 756
\HyColor@BookmarkColor 349
\hyper@anchorend 742
\hyper@anchorstart 742
\HyperDestNameFilter 773
\hypertarget 23

I

\if@filesw 800, 950, 1343, 1492
\ifBKM@atend 1621, 1636, 1643

\ifBKM@DO@open 1287, 1473
\ifBKM@draft 660
\ifBKM@keeplevel 176
\ifBKM@numbered . . . 301, 304, 307, 762
\ifBKM@ok 557, 569
\ifBKM@open 198, 902, 1051, 1541
\ifBKM@startatroot 281, 284, 809, 958, 1505
\ifBKM@sw 787, 807, 948, 957, 1490, 1504
\ifcase 216, 256, 1109
\ifdim 1084, 1085
\IfDocumentMetadataTF 790, 1296
\iffalse 281, 298, 304
\IfFormatAtLeastTF 730, 731
\ifHy@bookmarksnumbered 292, 295, 298
\ifHy@bookmarksopen 196
\ifluatex 1584
\ifnum 217, 218, 257, 258, 340, 343, 369, 478, 757, 809, 818, 903, 920, 958, 968, 1052, 1064, 1472, 1505, 1514, 1518, 1542, 1554
\ifpdf 640, 682
\iftrue 284, 295, 301, 326, 333
\ifvtex 651, 710
\ifvtexpdf 939
\ifx . . . 102, 120, 126, 132, 170, 210, 216, 250, 256, 326, 333, 366, 421, 430, 447, 455, 463, 471, 489, 492, 501, 504, 511, 524, 599, 642, 643, 678, 683, 691, 700, 711, 720, 760, 833, 834, 835, 836, 837, 838, 842, 876, 877, 882, 916, 983, 984, 985, 986, 987, 988, 1020, 1021, 1024, 1041, 1060, 1196, 1204, 1208, 1212, 1217, 1218, 1219, 1220, 1221, 1222, 1228, 1259, 1260, 1265, 1311, 1312, 1318, 1366, 1375, 1379, 1384, 1385, 1386, 1387, 1388, 1389, 1399, 1444, 1445, 1448, 1475, 1497, 1570, 1578
\ifxetex 648, 699
\immediate 1345, 1361, 1486, 1538
\InputIfFileExists 638, 732
\inputlineno 1576

J

\jobname 1335

K

\kvsetkeys 167, 1194, 1365

L

\ltx@empty 170, 185
\ltx@firstofone 904
\ltx@GlobalAppendToMacro 182
\ltx@gobble 662, 663, 665
\ltx@gobbletwo 664, 668, 669, 670, 674
\ltx@IfUndefined . 203, 213, 253, 1579
\ltx@ifundefined 612
\ltx@LocalAppendToMacro 608
\ltx@LocToksA 1587, 1590
\ltx@one 198, 307, 340, 343
\ltx@space 613, 615
\ltx@undefined 666, 739
\ltx@zero 198, 307, 340, 343

M

\maxdimen 200
\MessageBreak 224, 264, 411, 432, 693, 703, 714, 722, 734, 1314, 1319, 1322

N

\NeedsTeXFormat 98, 781, 936, 1189, 1329
\newcommand 167, 181, 547, 610, 667, 671, 740, 788, 799, 949, 1491, 1623, 1630
\newcount 784, 945, 1487
\newif 557, 787, 948, 1490
\newpage 34
\newwrite 1344
\number 201, 368, 752, 905, 1049, 1109, 1540
\numberline 763, 768
\numexpr 115

O

\openout 1345

P

\p@ 1085
\PackageError 371, 410, 572, 692, 721, 733, 839, 989, 1223, 1390
\PackageInfo 550
\PackageWarning 223, 263, 431, 479, 560, 635, 1624
\PackageWarningNoLine 661, 685, 702, 713, 941
\paperheight 73
\part 49
\partnumberline 765, 770
\pdfbookmark . . 666, 667, 739, 745, 749
\pdfextension 643, 644
\pdfoutline 642, 644, 1286
\pdfstringdef 830, 979, 1530
\ProcessKeyvalOptions 658
\protected 644
\providecommand 639, 730, 1486
\ProvidesFile . . . 782, 937, 1190, 1330
\ProvidesPackage 99

R

\ReadBookmarks 673, 778
\renewcommand 672
\RequirePackage 140
\romannumeral 611

S

\section 20, 39, 50, 55
\setbox 240
\setlength 527, 529, 532
\SetupKeyvalOptions 141, 1602
\space 439, 453, 461, 469, 477, 497, 509, 514
\special 899, 1046, 1333
\ss 33

\strip@pt 535
\subpdfbookmark 669, 747, 753
\subsection 21, 31, 33, 45, 56
\subsubsection 32, 51

T

\tag 792, 1298
\the 108, 115, 245, 804, 811, 820, 954, 961, 970, 1501, 1507, 1515, 1576, 1590
\topmargin 73

U

\usepackage 3, 4, 5

W

\write 1361, 1486, 1538

X

\x 107, 110, 1588, 1597

Z

\z@ 240, 369, 478, 785, 809, 920, 946, 958, 1064, 1084, 1472, 1488, 1505, 1518, 1554