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 (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 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 ....................................... 20
    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 pdFPX ....................................... 31
  3.5 Drivers with pdfmark specials ......................... 34
    3.5.1 Driver dvips ........................................ 34
    3.5.2 Driver dvipsone .................................... 34

∗Please report any issues at https://github.com/ho-tex/oberdiek/issues
1 Documentation

1.1 Introduction

This package \texttt{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 \texttt{hyperref} \cite{hyperref} the bookmarks are generated in the order of the bookmark generating macros (\texttt{\textbackslash 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 \texttt{\subsubsection} may follow a \texttt{\chapter}. This was an error in \texttt{hyperref}, that prints a warning and tries to fix this.

- Several bookmarks may point to the same destination. In \texttt{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. \texttt{\usepackage\{options\}\{bookmark\}}
   This is the only place for driver options and option \texttt{atend}.

2. \texttt{\bookmarksetup\{\{options\}\}}
   This command is just for setting options.

3. \texttt{\bookmarksetupnext\{\{options\}\}}
   The options are stored and called after the options of the next \texttt{\bookmark} command.

4. \texttt{\bookmark\{\{options\}\}\{\{title\}\}}
   This command sets the bookmark. The option settings remain limited to this bookmark.

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

1.2.1 Options \texttt{draft} and \texttt{final}

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

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

Supported drivers are `pdftex`, `dvips`, `dvipsone`, `textures`, `dvipdfm` (xetex), and `vtx`. The \TeX\ engines `pdftex`, `Xe\TeX`, and `VTex` are automatically detected. The default for the DVI drivers is `dvips`. This can be changed in the configuration file `bookmark.cfg` by \texttt{\BookmarksDefaultDriver}, e.g.:

\begin{verbatim}
def\BookmarksDefaultDriver{dvipdfm}
\end{verbatim}

**Open bookmarks with dvipdfmx.** Since 2007-04-25 the cvs version of dvipdfmx contains a patch that extends the \texttt{\special} for bookmarks in order to specify the open status of an outline entry. Option `dvipdfmx-outline-open` notifies the package that the dvi driver program understands this kind of \texttt{\special}. Alternatively \texttt{\SpecialDvipdfmxOutlineOpen} can be defined as number one in the configuration file or before the package is loaded, e.g.:

\begin{verbatim}
\chardef\SpecialDvipdfmxOutlineOpen=1\relax
\end{verbatim}

## 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:
\begin{verbatim}
view={FitB}, view={FitH 842}, view={XYZ 0 100 null}
\end{verbatim}

Some view specification parameters expect numbers as parameters with unit bp. They can be given either as plain numbers or as length expressions inside \texttt{\textbackslash calc}. Expressions of package \texttt{calc} are supported if the package is loaded. Otherwise \texttt{\textbackslash dimexpr} is used. Example:
\begin{verbatim}
view={FitH \texttt{\textbackslash calc{\textbackslash paperheight-\textbackslash topmargin-1in}}}
view={XYZ 0 \texttt{\textbackslash calc{\textbackslash paperheight} null}}
\end{verbatim}

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

named: Named action name:
\begin{verbatim}
FirstPage, LastPage, NextPage, PrevPage
\end{verbatim}

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:

\begin{center}
\begin{tabular}{|l|l|}
\hline
Action & Options \\
\hline
GoTo: & dest \\
GoTo: & page + view \\
GoToR: & gotor + dest \\
GoToR: & gotor + page + view \\
Named: & named \\
URI: & uri \\
\hline
\end{tabular}
\end{center}

Missing actions. If the action is missing package \texttt{bookmark} throws an error message. Depending on the driver (\texttt{pdftex}, \texttt{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 \texttt{\textbackslash bookmark}. However, \texttt{\textbackslash dimexpr} does provide the line number, but unhappily the file name is a secret. The package supports some ways to get the file name:

\begin{itemize}
\item If \texttt{LuaT\textbackslash X} (independently from DVI or PDF modus) is running, then its \texttt{\textbackslash status.filename} is used automatically.
\item Package \texttt{\textbackslash currfile} redefines \LaTeX\ internals to keep track of the file name. If the package is loaded, then its \texttt{\textbackslash currfilepath} is detected and used automatically by package \texttt{bookmark}.
\item The file name can be set manually by option \texttt{scrfile} in \texttt{\textbackslash bookmarksetup} or \texttt{\textbackslash 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.
\end{itemize}

1.2.5 Level options

The order of the bookmark entries are defined by the appearance order of \texttt{\textbackslash bookmark} commands. The tree structure is constructed by the property \texttt{level} of the bookmark nodes. The values of \texttt{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 \texttt{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}
[...]
\part{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 \texttt{⟨name⟩} \{\texttt{⟨key value list⟩}\}

The \texttt{⟨key value list⟩} of option settings is assigned the style \texttt{⟨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 \texttt{⟨option⟩}

Macro \bookmarkget extracts the value of the latest option setting of option \texttt{⟨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 \texttt{ifnum} or \texttt{ifcase}. If you want to have the digits 0 and 1, then prefix \bookmarkget with \texttt{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`:

<table>
<thead>
<tr>
<th>hyperref</th>
<th>bookmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>bookmarksdepth</td>
<td>depth</td>
</tr>
<tr>
<td>bookmarksopen</td>
<td>open</td>
</tr>
<tr>
<td>bookmarksopenlevel</td>
<td>openlevel</td>
</tr>
<tr>
<td>bookmarksnumbered</td>
<td>numbered</td>
</tr>
</tbody>
</table>

The following commands are also available:

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

### 1.4 Adding bookmarks at the end

Package option `atend` enables the following macro:

```latex
\usepackage[atend]{bookmark} \BookmarkAtEnd {\langle stuff\rangle}
```

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

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

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

```latex
\usepackage[atend]{bookmark} \bookmark(\% startatroot, named=LastPage, level=0, (Last page)\%)}
```
Remarks.

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

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

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 \AtEnd-
Dvi of package atenddvi helps. It puts its argument on last page of the
document. Two \LaTeX runs are necessary at least, because the last page is
detected by a reference.

- The time of expansion of the argument of \BookmarkAtEnd is not specified.
  This can happen immediately or at the end of the document.

1.5 Limitations/ToDos

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

2 Example

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

\subsection{Subsection B}
\subsubsection{Subsubsection C}
\subsection{Umlauts: "A"\"O"\"U"\"a"\"o"\"u\ss}
\newpage
\begin{figure}
\hypertarget{fig}{A figure.}
```

\bookmarksetup{color=blue}

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

\subsection{Subsection B}
\subsubsection{Subsubsection C}
\subsection{Umlauts: "A"\"O"\"U"\"a"\"o"\"u\ss}
\newpage
\begin{figure}
\hypertarget{fig}{A figure.}
```
\section{Very important section}
\bookmarksetup{italic, bold=false, color=blue}
\subsection{Italic section}
\bookmarksetup{italic=false}
\part{Misc}
\section{Diverse}
\subsection{Subsubsection, omitting subsection}
\bookmarksetup{startatroot}
\section{Last section outside part}
\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]
\bookmark[page=2, view=FitBH \calc{\paperheight-\topmargin-1in-\headheight-\headsep}]
\bookmark[uri={http://www.dante.de/}, color=magenta]
\bookmark[gotor={t.pdf}, page=1, view={XYZ 0 1000 null}, color=cyan!75!black]
\end{document}

\example
3 Implementation

3.1 Package

\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{bookmark} [2016/05/17 v1.26 PDF bookmarks (HO)]

3.1.1 Requirements

\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}\x%}
\fi

\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}

\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}

\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}\x%}
\fi

\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.

\RequirePackage{ifpdf}[2009/04/10]
\RequirePackage{ifxetex}
\RequirePackage{ifvtex}[2008/11/04]
\RequirePackage{ifluatex}[2010/03/01]
\RequirePackage{pdftexcmds}[2010/11/04]
\RequirePackage{hyperref}[2010/06/18]
\RequirePackage{auxhook}[2007/04/06]
\RequirePackage{kvsetkeys}[2010/03/01]
\RequirePackage{xvosets}[2009/08/13]
\RequirePackage{hvcolor}[2008/09/08]
\RequirePackage{bitset}[2011/01/30]
\RequirePackage{ltxcmds}[2011/04/14]

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}\ltx@empty
\BKM@HookNextClear
\fi
\else
\expandafter\bookmarksetup\expandafter{\BKM@HookNext}\ltx@empty
\BKM@HookNextClear
\fi
\if\BKM@hook
\BKM@hook
\else
\else
\if\BKM@keeplevel
\BKM@currentlevel{\BKM@level}%
\fi
\fi
\BKM@setupnext
\BKM@SetDepthOrLevel \BKM@depth \BKM@param

\fi

\BKM@SetDepthOrLevel \BKM@depth

\fi

\fi

\BKM@MacroCurrentLevel

\BKM@MacroCurrentLevel

\BKM@startatrootfalse
\def\BKM@startatrootfalse{\%}
\global\let\ifBKM@startatroot\iffalse
\}
\BKM@startatroottrue{\%
\global\let\ifBKM@startatroot\iftrue
\}
\define@key{BKM}{rellevel}{\BKM@CalcExpr\BKM@level{#1}+\BKM@currentlevel}
\bookmark@level{\BKM@level}
\def\BKM@currentlevel{0}

Make `bookmark`'s option numbered an alias for hyperref's `bookmarksnumbered`.
\DeclareBoolOption{numbered}{\ifHy@bookmarksnumbered true\else false\fi}
\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}
\def\bookmark@numbered{\ifBKM@numbered\ltx@one\else\ltx@zero\fi}

Redefinitions hyperref's options
\BKM@PatchHyperrefOption{bookmarksopen}{open}
\BKM@PatchHyperrefOption{bookmarksopenlevel}{openlevel}
\BKM@PatchHyperrefOption{bookmarksdepth}{depth}
Font style options.  Caution: Package \texttt{bitset} is zero-based, the PDF specifications starts with one.

\begin{verbatim}
\bitsetReset{BKM@FontStyle}\
\define@key{BKM}{italic}[true]{\nenum\bitsetSet{BKM@FontStyle}{0}}\
\else\bitsetClear{BKM@FontStyle}{0}\fi\%
\define@key{BKM}{bold}[true]{\nenum\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}}\%
\end{verbatim}

Options for color.

\begin{verbatim}
\define@key{BKM}{color}{\HyColor@BookmarkColor{#1}\BKM@color{bookmark}{color}}\%
\BKM@color\let\BKM@color\@empty\bookmark@color\def\bookmark@color{\BKM@color}\%
\end{verbatim}

3.1.3 Action options

\begin{verbatim}
\def\BKM@temp#1{\DeclareStringOption{#1}\
\expandafter\edef\csname bookmark@#1\endcsname{\csname BKM@#1\endcsname}}\%
\bookmark@dest\BKM@temp{dest}\bookmark@named\BKM@temp{named}\bookmark@uri\BKM@temp{uri}\%
\end{verbatim}
\bookmark@gotor
374 \BKM@temp{gotor}

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

\bookmark@page
389 \def\bookmark@page{\BKM@@page}
390 \define@key{BKM}{view}{% 
391 \BKM@CheckView{#1}%
392 }
\BKM@view
393 \let\BKM@view\@empty

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

\BKM@CheckView
395 \def\BKM@CheckView#1{% 
396 \BKM@CheckViewType#1 \nil 
397 }
\BKM@CheckViewType
398 \def\BKM@CheckViewType#1 #2\nil{% 
399 \def\BKM@type{#1}% 
400 \@onelevel@sanitize\BKM@type
401 \BKM@TestViewType{Fit}{%}
402 \BKM@TestViewType{FitB}{%}
403 \BKM@TestViewType{FitH}{% 
404 \BKM@CheckParam#2 \nil{top}%
405 }%
406 \BKM@TestViewType{FitBH}{% 
407 \BKM@CheckParam#2 \nil{top}%
408 }%
409 \BKM@TestViewType{FitV}{% 
410 \BKM@CheckParam#2 \nil{bottom}%
411 }%
412 \BKM@TestViewType{FitBV}{% 
413 \BKM@CheckParam#2 \nil{bottom}%
414 }%
415 \BKM@TestViewType{FitR}{% 
416 \BKM@CheckRect(#2){ }%
417 }%
418 \BKM@TestViewType{XYZ}{%
\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
\@onelevel\PackageError{bookmark}{%  
@warning{Missing parameter (#3) for `\BKM@type',\MessageBreak
use 0%}
\}%
\def\BKM@param{#1}%
\ifx\BKM@param\@empty
\PackageWarning{bookmark}{%  
using 0%
\}%
\else
\BKM@CalcParam
\fi
\edef\BKM@view{\BKM@view\space\BKM@param}%
\}

\BKM@CheckParam
\def\BKM@CheckParam#1 #2\@nil#3{%  
\def\BKM@param{#1}%
\@onelevel\PackageError{bookmark}{%  
\let\BKM@view\BKM@param%  
\expandafter\@car
\else
\expandafter\@gobble
\fi
\BKM@CalcParam
\edef\BKM@view{\BKM@view\space\BKM@param}%
\}

\BKM@CheckRect
\def\BKM@CheckRect#1#2#3#4#5\@nil{%  
\BKM@CalcParam
\edef\BKM@view{\BKM@view\space\BKM@param}%
\}

\BKM@CheckRect
\def\BKM@CheckRect#1 #2 #3 #4 #5\@nil{%  
\BKM@CalcParam
\edef\BKM@view{\BKM@view\space\BKM@param}%
\}

\BKM@CheckRect
\def\BKM@CheckRect#1 #2 #3 #4 #5\@nil{%  
\BKM@CalcParam
\edef\BKM@view{\BKM@view\space\BKM@param}%
\}
\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%
\ifxundefined{calc@assign@dimen}{}
\ifxundefined{dimexpr}{%\setlength{\dimen@}{#2}\%
\else\setlength{\dimen@}{\dimexpr#2\relax}\%
\fi}
\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}{%
\ifxundefined{BKM@style@#1}{%
\PackageInfo{bookmark}{Redefining style `#1'}%
\else%
\PackageInfo{\texttt{\textit{bookmark}}}{\texttt{\textit{Redefining style `#1'}}%}
\fi}
\@namedef{BKM@style@#1}{#2}%
}\define@key{BKM}{style}{%
\BKM@StyleCall{#1}%
}\newif\ifBKM@ok
\BKM@StyleCall
\def\BKM@StyleCall#1{%
\ifxundefined{BKM@style@#1}{%
\PackageError{\texttt{\textit{bookmark}}}{\texttt{Undefined style `#1'}}%}
\else%
\BKM@oktrue
\edef\BKM@StyleCurrent{#1}%
\fi}
\check@stylestack.
\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@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
\define@key{BKM}{addtohook}{\ltx@LocalAppendToMacro\BKM@hook{#1}}
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{dvipsone}\BKM@DefineDriverKey{textures}\BKM@DefineDriverKey{dvipdfm}\BKM@DefineDriverKey{dvipdfmx}\BKM@DefineDriverKey{xetex}\BKM@DefineDriverKey{vtex}\define@key{BKM}{dvipdfmx-outline-open}\%\\ifx\pdfextension\@undefined\else\protected\def\pdfoutline{\pdfextension outline}\fi\else\fi\pdfextension outline\%\\chardef\SpecialDvipdfmxOutlineOpen@\chardef\SpecialDvipdfmxOutlineOpen@\fi\g@addto@macro\BKM@DisableOptions{%\DisableKeyvalOption{BKM}{dvipdfmx-outline-open}\%\}%;}

\def\bookmark@driver\BKM@driver\InputIfFileExists{bookmark.cfg}{}{}\providecommand*{\BookmarkDriverDefault}{dvips}\BKM@driver

Lua\TeX{} and pdf\TeX{} share driver.
670 \ifxetex
671 \def\BKM@driver{dvipdfm}\
672 \else
673 \ifvtex
674 \def\BKM@driver{vtex}\
675 \else
676 \edef\BKM@driver{\BookmarkDriverDefault}\
677 \fi
678 \fi
679 \fi

Process options.
680 \ProcessKeyvalOptions*
681 \BKM@DisableOptions

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

Driver validation and loading.
699 \ifBKM@DvipdfmxOutlineOpen
700 \ltx@IfUndefined{SpecialDvipdfmxOutlineOpen}{%\}
701 \ifxetex
702 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
703 \else
704 \chardef\SpecialDvipdfmxOutlineOpen\ltx@one
705 \BKM@DvipdfmxOutlineOpentrue
706 \fi
707 \fi
708 ){%\}
709 \ifnum\SpecialDvipdfmxOutlineOpen\\z@
710 \BKM@DvipdfmxOutlineOpentrue
711 \fi
712 }
713 \def\BKM@temp{dvipdfm}\
714 \ifx\BKM@temp\BKM@driver
715 \def\BKM@driver{dvipdfm}\
716 \fi
717 \def\BKM@temp{pdftex}\
718 \ifpdf
719 \ltx@BKM@temp{BKM@driver}
720 \else
721 \PackageWarningNoLine{bookmark}{%
722 \Wrong driver \BKM@driver', using \pdftex instead%
723 )%}
\let\BKM@driver\BKM@temp
\fi
\else
\ifx\BKM@temp\BKM@driver
\PackageError{bookmark}{Wrong driver, pdfTeX is not running in PDF mode.\MessageBreakPackage loading is aborted%}{@ehc}
\fi
\fi
\def\BKM@temp{dvipdfm}\
\ifetex
\ifx\BKM@temp\BKM@driver
\else
\PackageWarningNoLine{bookmark}{Wrong driver `\BKM@driver',\MessageBreakusing `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',\MessageBreakusing `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.\MessageBreakPackage loading is aborted%}{@ehc}
\expandafter\expandafter\expandafter\endinput
\fi
\fi
\fi
\expandafter\expandafter\expandafter\endinput
\fi
\def\BKM@temp{dvipdfm}\
\ifetex
\ifx\BKM@temp\BKM@driver
\else
\PackageWarningNoLine{bookmark}{Wrong driver `\BKM@driver',\MessageBreakusing `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',\MessageBreakusing `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.\MessageBreakPackage loading is aborted%}{@ehc}
\expandafter\expandafter\expandafter\endinput
\fi
\fi
\fi
\expandafter\expandafter\expandafter\endinput
\fi
\def\BKM@temp{dvipdfm}\
\ifetex
\ifx\BKM@temp\BKM@driver
\else
\PackageWarningNoLine{bookmark}{Wrong driver `\BKM@driver',\MessageBreakusing `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',\MessageBreakusing `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.\MessageBreakPackage loading is aborted%}{@ehc}
\expandafter\expandafter\expandafter\endinput
\fi
\fi
\fi
\expandafter\expandafter\expandafter\endinput
\fi
\InputIfFileExists{bkm-\BKM@driver.def}{}{\PackageError{bookmark}{Unsupported driver `\BKM@driver'.\MessageBreakPackage 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]
Section number, text, label, level, file

\section{Driver for dvipdfm}

\subsection{dvipdfm}

\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-dvipdfm.def}[2016/05/17 v1.26 bookmark driver for dvipdfm (HO)]

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

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

\if\BKM@sw
\newif\if\BKM@sw
\BKM@sw
\begin{verbatim}
945 \fi
946 \BKM@action
947 >>%
948 }%
949 \endgroup
950 \fi
951 }

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

3.3 Driver for VTeX
958 \NeedsTeXFormat{LaTeX2e}
959 \ProvidesFile{bkm-vtex.def} %
960 [2016/05/17 v1.26 bookmark driver for VTeX (HO)]
962 \ifvtexpdf
963 \else
964 \PackageWarningNoLine{bookmark}{%
965 The VTeX driver only supports PDF mode%
966 }%
967 \fi

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

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

\ifBKM@sw
971 \newif\ifBKM@sw

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

27
\BKM@EscapeString\BKM@gotor
\edef\BKM@action{% 
<u=%
/S/GoToR%
/F(\BKM@gotor)%
\BKM@action
>>%}
}
\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=%
\if\BKM@open%
\ifndef\BKM@level<\BKM@openlevel
o%
\else
%
c%
\else
%
c%
\ifndef\BKM@RGBcolor\@empty
c=\BKM@RGBcolor,%
\fi
\ifndef\BKM@FLAGS<\z
r=\BKM@FLAGS,%
\fi

t=\BKM@title%
}%
}}

\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{%
\ifdim\dimen@>\z
\ifdim\dimen@<\p
\dimen@=255\dimen@
\advance\dimen@ by 32768sp
\else
\ifdim\dimen@<\p
\dimen@=\dimen@
\fi
\fi
\fi
\fi
\fi
\if\BKM@open%
\ifndef\BKM@level<\BKM@openlevel
o%
\else
%
c%
\ifndef\BKM@RGBcolor\@empty
c=\BKM@RGBcolor,%
\fi
\ifndef\BKM@FLAGS<\z
r=\BKM@FLAGS,%
\fi

t=\BKM@title%
}%
}}

\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{%
\ifdim\dimen@>\z
\ifdim\dimen@<\p
\dimen@=255\dimen@
\advance\dimen@ by 32768sp
\else
\ifdim\dimen@<\p
\dimen@=\dimen@
\fi
\fi
\fi
\fi
\fi
\if\BKM@open%
\ifndef\BKM@level<\BKM@openlevel
o%
\else
%
c%
\ifndef\BKM@RGBcolor\@empty
c=\BKM@RGBcolor,%
\fi
\ifndef\BKM@FLAGS<\z
r=\BKM@FLAGS,%
\fi

t=\BKM@title%
}%
}}

29
\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@ii
}%
\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
\endgroup
\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@title0|\@nil}%
\edef\BKM@title{expandafter\BKM@vtex@one\BKM@title1|\@nil}%
\edef\BKM@title{expandafter\BKM@vtex@two\BKM@title2|\@nil}%
\edef\BKM@title{expandafter\BKM@vtex@three\BKM@title3|\@nil}%
}\BKM@vtex@leftparen
\gdef\BKM@vtex@leftparen#1(\@nil{\% #1\% 
\ifx||#1||% 
\else
 (}%
\ltx@ReturnAfterFi(%
|\BKM@vtex@leftparen#1|\@nil
\}%
\fi
\}%
\BKM@vtex@rightparen
\gdef\BKM@vtex@rightparen#1\)#2|\@nil(% #1%
\ltxf|\#2|%
\else
 ()%
\ltx@ReturnAfterFi(%
|\BKM@vtex@rightparen\#2|\@nil
\}%
\fi
\}%
3.4 Driver for pdfTeX

\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-pdftex.def}
\endgroup

\BKM@vtex@zero
\gdef\BKM@vtex@zero#1\nil{\%}
\BKM@vtex@one
\gdef\BKM@vtex@one#1\nil{\%}
\BKM@vtex@two
\gdef\BKM@vtex@two#1\nil{\%}
\BKM@vtex@three
\gdef\BKM@vtex@three#1\nil{\%}

3.4 Driver for pdfTeX
\BKM@DefGotoNameAction is a hook for package hypdestopt.

\BKM@SourceLocation
3.5 Drivers with pdfmark specials

3.5.1 Driver dvips

\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-dvips.def} [2016/05/17 v1.26 bookmark driver for dvips (HO)]
\def\BKM@PSHeaderFile#1{%
  \special{header=#1}%
}\BKM@filename
\def\BKM@filename{\jobname.out.ps}
\BKM@PSHeaderFile\BKM@filename
\RequirePackage{atveryend}[2009/12/07]
\AfterLastShipout{\BKM@pdfmark@out}

3.5.2 Driver dvipsone

\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-dvipsone.def} [2016/05/17 v1.26 bookmark driver for dvipsone (HO)]
\def\BKM@PSHeaderFile#1{%
  \special{header=#1}%
}\BKM@filename
\def\BKM@filename{\jobname.out.ps}
\BKM@PSHeaderFile\BKM@filename
\RequirePackage{atveryend}[2009/12/07]
\AfterLastShipout{\BKM@pdfmark@out}

3.5.3 Driver textures

\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-textures.def} [2016/05/17 v1.26 bookmark driver for textures (HO)]
\def\BKM@PSHeaderFile#1{%
  \special{prePostScriptfile #1}%
}\BKM@filename
\def\BKM@filename{\jobname.out.ps}
\BKM@PSHeaderFile\BKM@filename
\RequirePackage{atveryend}[2009/12/07]
\AfterLastShipout{\BKM@pdfmark@out}

3.5.4 Common part

\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{bkm-pdfmark.def} [2016/05/17 v1.26 bookmark driver for pdfmark (HO)]
\def\BKM@PSHeaderFile#1{%
  \special{pdfmarkfile #1}%
}\BKM@filename
\def\BKM@filename{\jobname.out.ps}
\BKM@PSHeaderFile\BKM@filename
\RequirePackage{atveryend}[2009/12/07]
\AfterLastShipout{\BKM@pdfmark@out}
\BKM@pdfmark\out  Do not use package \texttt{rerunfilecheck} here, because the file \texttt{\BKM@filename} is not read during the \LaTeX run.

\begin{verbatim}
\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{\%\pdfmark/clearmark load put}\%\else\let\BKM@write\@gobble\let\BKM@DO@entry\@gobbletwo\fi}
\BKM@write
\def\BKM@DO@entry#1#2{\begingroup\kvsetkeys{BKM@DO}{#1}\ifx\BKM@DO@srcfile\@empty\else\BKM@UnescapeHex\BKM@DO@srcfile\@empty\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\edef\BKM@action{\BKM@SourceLocation}
\PackageError{bookmark}{Missing action\BKM@SourceLocation}{0ehc}\edef\BKM@action{\BKM@DO@rawaction}\fi\fi\fi\fi\edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}\fi\let\BKM@action\@empty\let\BKM@DO@action\@empty\ifx\BKM@DO@action\@empty\else\BKM@DO@action(\%/Action/GoTo\%\endgroup\end{verbatim}

\BKM@DO@entry  The specification for pdfmark says that }\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\texttt{\&}}\relax\BKM@UnescapeHex\BKM@DO@srcfile\@empty\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\edef\BKM@action{\BKM@SourceLocation}
\PackageError{bookmark}{Missing action\BKM@SourceLocation}{0ehc}\edef\BKM@action{\BKM@DO@rawaction}\fi\fi\fi\fi\fi\edef\BKM@attr{\BKM@attr/C[\BKM@DO@color]}\fi\let\BKM@action\@empty\let\BKM@DO@action\@empty\ifx\BKM@DO@action\@empty\else\BKM@DO@action(\%/Action/GoTo\%\endgroup\end{verbatim}
3.6 Common part for pdftex and pdfmark

3.6.1 Write auxiliary file

\RequirePackage{auxhook}
\AddLineBeginMainAux{\providecommand\BKM@entry[2]{}}
\newcount\BKM@id
\BKM@id=\z@

\if\BKM@sw
\newif\if\BKM@sw
\ifndef\BKM@sw
\newcommand*{\bookmark}[2][{}]{%
\@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 
\cnewname BKM@BKM@prev\endsname 
\ifnum\BKM@level>\BKM@x@level\relax 
\expandafter\xdef\csname BKM@BKM@id\endcsname{% 
\{\BKM@prev\}\{\BKM@level\}0% 
} 
\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 
\ifeBKM@open 
\ifnum\BKM@openlevel<\BKM@level ,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 
\BKM@getx 
\def\BKM@getx#1#2#3{%
3.6.2 Read auxiliary data

\SetupKeyvalOptions{family=BKM@DO,prefix=BKM@DO@}
\DeclareStringOption{id}
\DeclareStringOption{flags}
\DeclareStringOption{color}
\DeclareStringOption{dest}
\DeclareStringOption{named}
\DeclareStringOption{uri}
\DeclareStringOption{gotor}
\DeclareStringOption{page}
\DeclareStringOption{view}
\DeclareStringOption{rawaction}
3.7 Option atend

3.7.1 Hook

\newcommand{\BookmarkAtEnd}{\PackageWarning{bookmark}{Ignored, because option `atend' is missing}}
\expandafter\endinput

\let\BKM@EndHook\@empty

3.7.2 Drivers using hooks at end of document

The following drivers use package atveryend's \AfterLastShipout, because they still need the .aux file.

- Driver pdftex uses \pdfoutline that can be used after the last page.
- PostScript drivers such as dvips use an external PostScript header file for the bookmarks. File writing can be done after the last shipout page, but before the .aux file is closed.

3.7.3 Drivers using \AtEndDvi

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

4.1 Download

Package. This package is available on CTAN\(^1\):


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

CTAN:install/macros/latex/contrib/oberdiek.tds.zip

TDS refers to the standard “A Directory Structure for \LaTeX\ Files” (CTAN:tds/tds.pdf). Directories with texmf in their name are usually organized this way.

4.2 Bundle installation

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

unzip oberdiek.tds.zip -d ~/texmf

Script installation. Check the directory TDS:scripts/oberdiek/ for scripts that need further installation steps. Package attachfile2 comes with the Perl script pdfatfi.pl that should be installed in such a way that it can be called as pdfatfi. Example (linux):

chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/

4.3 Package installation

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

\texttt{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):

\begin{verbatim}
bookmark.sty \rightarrow \text{tex/latex/oberdiek/bookmark.sty}
ckm-dvipdfm.def \rightarrow \text{tex/latex/oberdiek/bkm-dvipdfm.def}
ckm-dvips.def \rightarrow \text{tex/latex/oberdiek/bkm-dvips.def}
ckm-dvipsone.def \rightarrow \text{tex/latex/oberdiek/bkm-dvipsone.def}
ckm-textures.def \rightarrow \text{tex/latex/oberdiek/bkm-textures.def}
ckm-pdfTeX.def \rightarrow \text{tex/latex/oberdiek/bkm-pdfTeX.def}
ckm-vtex.def \rightarrow \text{tex/latex/oberdiek/bkm-vtex.def}
bookmark.pdf \rightarrow \text{doc/latex/oberdiek/bookmark.pdf}
bookmark-example.tex \rightarrow \text{doc/latex/oberdiek/bookmark-example.tex}
bookmark.dtx \rightarrow \text{source/latex/oberdiek/bookmark.dtx}
\end{verbatim}

\(^1\)http://ctan.org/pkg/bookmark
If you have a `docstrip.cfg` that configures and enables `docstrip`'s TDS installing feature, then some files can already be in the right place, see the documentation of `docstrip`.

### 4.4 Refresh file name databases

If your \TeX{} distribution (\TeXe{}, \miktex{}, ...) relies on file name databases, you must refresh these. For example, \TeXe{} users run `texhash` or `mktexlsr`.

### 4.5 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:

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

An example follows how to generate the documentation with pd\LaTeX:

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

### 5 Catalogue

The following XML file can be used as source for the \TeX{} Catalogue. The elements caption and description are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is `bookmark.xml`.

```xml
<?xml version='1.0' encoding='us-ascii'?>
<!DOCTYPE entry SYSTEM 'catalogue.dtd'>
<entry datestamp='$Date$' modifier='$Author$' id='bookmark'>
  <name>bookmark</name>
  <caption>A new bookmark (outline) organization for hyperref.</caption>
  <authorref id='auth:oberdiek'/>
  <copyright owner='Heiko Oberdiek' year='2007-2011'/>
  <license type='lppl1.3'/>
  <version number='1.26'/>
  <description>
    This package implements a new bookmark (outline) organization for
    package `<xref refid='hyperref'>hyperref</xref>`. 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
    `<xref refid='hyperref'>hyperref</xref>` uses two runs.
  </description>
</entry>
```
6 References


7 History

[2007/02/19 v0.1]
- First experimental version.

[2007/02/20 v0.2]
- Option startatroot added.
- Dummies for \pdf(uni)escape... commands added to get the package basically work for non-pdf\TeX users.

[2007/02/21 v0.3]
- Dependency from pdf\TeX 1.30 removed by using package pdfescape.

[2007/02/22 v0.4]
- hyperref's bookmarktype 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 \varepsilon-\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 \pdffmark with GoToR action.

[2007/09/25 v1.2]
- \pdffmark driver respects \nofiles.

[2008/08/08 v1.3]
- Package flags replaced by package \bitset. Now flags are also supported without \e-\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 \textbf{and} \textit{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 \pdffmark.

[2009/12/07 v1.7]
- Use of package \atveryend fixed.

[2009/12/17 v1.8]
- Support of \hyperref 2009/12/17 v6.79v for X\e-\TeX.
[2010/03/30 v1.9]
- Package name in an error message fixed.

[2010/04/03 v1.10]
- Option \texttt{style} and macro \texttt{\bookmarkdefinestyle} added.
- Hook support with option \texttt{addtohook} added.
- \texttt{\bookmarkget} added.

[2010/04/04 v1.11]
- Bug fix (introduced in v1.10).

[2010/04/08 v1.12]
- Requires \texttt{ltxcmds} 2010/04/08.

[2010/07/23 v1.13]
- Support for memoir’s \texttt{\booknumberline} added.

[2010/09/02 v1.14]
- (Local) options \texttt{draft} and \texttt{final} added.

[2010/09/25 v1.15]
- Fix for option \texttt{dvipdfmx-outline-open}.
- Option \texttt{dvipdfmx-outline-open} is set automatically, if XeTeX \(\geq 0.9995\) is detected.

[2010/10/19 v1.16]
- Option ‘\texttt{startatroot}’ now acts globally.
- Option ‘\texttt{level}’ also accepts names the same way as option ‘\texttt{depth}’.

[2010/10/25 v1.17]
- \texttt{\bookmarksetupnext} added.
- Using \texttt{\kvsetkeys} of package \texttt{kvsetkeys}, because \texttt{\setkeys} of package \texttt{keyval} is not reentrant. This can cause problems (unknown keys) with older versions of hyperref that also uses \texttt{\setkeys} (found by GL).

[2010/11/05 v1.18]
- Use of \texttt{\pdf@ifdraftmode} of package \texttt{pdftexcmds} for the default of option \texttt{draft}.

[2011/03/20 v1.19]
- Use of \texttt{\dimexpr} fixed, if \varepsilon-\TeX{} is not used. (Bug found by Martin Münch.)
- Fix in documentation. Also layout options work without \varepsilon-\TeX{.}
[2011/04/13 v1.20]
- Bug fix: \BKM@SetDepth renamed to \BKM@SetDepthOrLevel.

[2011/04/21 v1.21]
- Some support for file name and line number in error messages at end of document (pdfTeX and pdfmark based drivers).

[2011/05/13 v1.22]
- Change of version 2010/11/05 v1.18 reverted, because otherwise draftmode disables some .aux file entries.

[2011/09/19 v1.23]
- Some \renewcommand changed to \def to avoid trouble if the commands are not defined, because hyperref stopped early.

[2011/12/02 v1.24]
- Small optimization in \BKM@toHexDigit.

[2016/05/16 v1.25]
- Documentation updates.

[2016/05/17 v1.26]
- define \pdfbookmark to allow pdftex driver to be used with LuaTeX.

8 Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; plain numbers refer to the code lines where the entry is used.

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46